



Split System Heat Pumps

Split System Heat Pumps
TWA075A-TWA200B
Air Handlers
TWE050A-TWE200B
50 Hz





Introduction

Split System Heat Pump Units . . . Designed With Your Needs In Mind.



The Trane reputation for quality and reliability in air conditioning continues with the Odyssey™ family of light commercial split systems. Trane paid attention to your needs to make sure you get a system that will meet your job requirements every time...and at a competitive price.

Couple Trane's reputation for quality and reliability in split system air conditioners with efficiency, flexibility and installation ease...and you have systems that will give you "Simply The Best Value."

Manufacturing Control

Trane's exclusive control over the design and manufacturing of all major components is unique in the industry. This approach assures us total control over both the quality and reliability of these components. And allows us to custom match components to deliver the best in split system performance.

Designing the Details

Careful attention was given to designing the details — from control wiring to the access panels. Odyssey units feature time-saving colored and numbered wiring and removable panels which allow complete access to all major components and controls. All outdoor units feature external high and low pressure switches for easy diagnosing and servicing of the unit. Service valves with gauge ports are provided on all units.

Standardized Cabinets

In addition, all cabinets have been standardized. When you are servicing an outdoor unit or an air handler, all components are in the same location from unit to unit.

Filters

The TWE050A, 075A, 100A and 100B air handlers are supplied with 1" (25.4 mm) throwaway filters as standard. The filter racks were designed to easily convert for installation of 2" (50.8 mm) filters. The TWE155B and 200B air handlers have 2" (50.8 mm) filters as standard.

UL Listed and ARI Certified

Trane meets or exceeds all nationally recognized agency safety and design standards. Each condensing unit is UL designed, approved and labeled in accordance to UL Standards: UL 1995 for central cooling air conditioners, refrigeration and air conditioning condensing and compressor units. Each air handler is designed, approved and labeled in accordance to UL 465 and UL 1995 standard for heat pumps. Each unit is certified in accordance with ARI Standard 210/240 or 340/360.

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Features and Benefits

Condensing Units Options

The TWA075A and 100A single compressor models feature single refrigeration circuitry, lowering job installation costs by requiring only one set of refrigerant lines. These units are ideal for the low cost, new construction jobs as well as renovation and replacement buildings.

In addition, Odyssey includes TWA155B and 200B dual compressor units to give true stand-by protection; if one compressor fails, the second will automatically start-up. Also, the first compressor can be serviced without shutting down the unit since the refrigerant circuits are independent.

Dual compressors are not just for protection, they also save energy costs. Most buildings are designed for the peak load requirements yet the building usually operates at less than peak load. During light load conditions, only one compressor functions to maintain the space comfort thus reducing the need for energy.

Trane split systems have been specified in thousands of applications and you'll find Odyssey will win you even more jobs with its small manageable cabinet. This light, compact design will save time and money for rigging and installation. And the compactness will permit Trane's unit to replace almost any unit — effortlessly.

Low Ambient Cooling Operation

Each heat pump unit can operate to 50°F (10°C) as standard in the cooling mode. An accessory Head Pressure Control gives you the capability to operate to 0°F (-18°C). All heat pumps offer these accessories:

- Head Pressure Control
- Coil Guard Kits
- Isolators both Rubber-in-Shear and Spring Type
- Anti-Short-Cycle Kit
- Time Delay Relay

Air Handlers Offer More Flexibility

Flexibility is a key to meeting changing market requirements. Odyssey split systems offer not only heat pumps but also convertible air handlers. The air handlers can be installed either vertically in a mechanical room or horizontally above a ceiling. And it doesn't require any removal of panels to make either airflow application work. These air handlers have a double sloped condensate drain pan that allows for either airflow configuration. And the drain pan can easily be removed for cleaning. All the air handlers feature factory installed belt drive and ball bearing evaporator fans with adjustable sheaves for maximum airflow performance. In fact, the standard motor on the TWA100A air handler will deliver 3325 cfm (5649 m³/hr) at 1.4" (349 Pa) ESP. Plus oversized motors are available for higher static applications.



Features and Benefits

Odyssey air handler versatility is further increased by a complete line of accessories designed to match and install smoothly:

- Discharge Plenum and Grille
- Return Grille
- Subbase
- Electric Heaters
- High Static Evaporator Motor
- Isolators both Rubber-in-Shear and Spring Type
- A Full Line of Thermostats
- Outdoor Thermostat



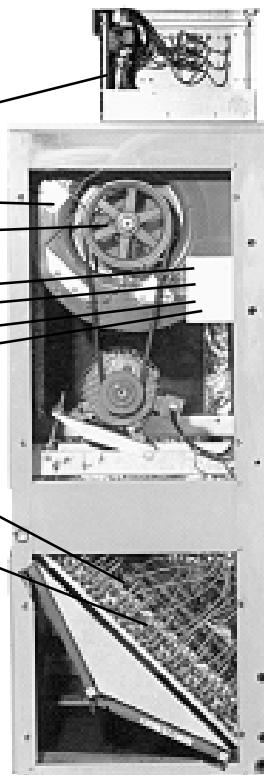
Odyssey Lowers Installation Costs

Your installation costs are reduced with Odyssey. Both outdoor units and air handlers are factory packaged and assembled so jobsite installation is quick and easy. You get a complete unit with all the components, controls and the internal wiring factory ready for a smooth jobsite start-up.

Unlike some competitive models the following components are factory-installed in Trane air handlers:

- Single Point Power Entry
- Blower wheel and housing
- Evaporator motor with sheaves and pulleys
- Low Voltage Terminal Board
- Transformer
- Contactor
- Fan relay
- DX Coil with complete refrigeration circuitry
- Expansion Valve and Check Valves

There's no need to install components and put together the air handler on the job. This provides you with less labor cost and fewer chances for installation errors which cause callbacks. All this means saving you money both in replacement and new construction applications.



Odyssey — A Complete Split System

Odyssey delivers the flexibility to select a complete system that meets your particular job requirements. Air handlers are designed, tested, and rated with outdoor units to let you select the proper match between capacity and load. Heat pumps can also be matched with Trane built-up air handlers. Also, these matched systems can be quickly engineered for specific applications using Trane's computerized selection and load programs.

Application Considerations

Application of this product should be within the catalogued airflow and performance considerations.

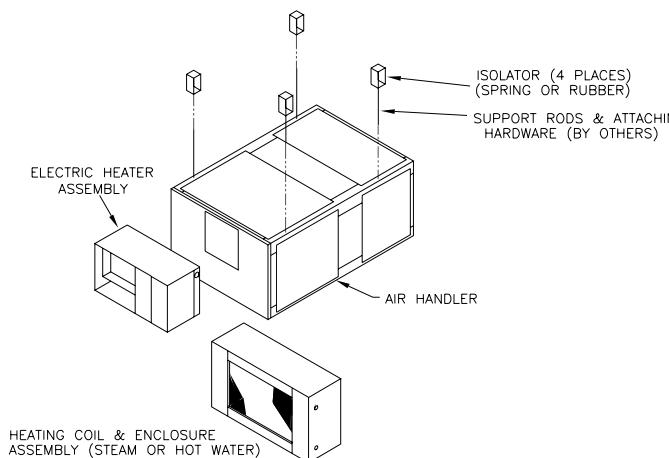
Clearance Requirements

The recommended clearances identified with unit dimensions should be maintained to assure adequate serviceability, maximum capacity and peak operating efficiency. Actual clearances which appear inadequate should be reviewed with the local Trane Representative.

180° Blower Rotation

The TWE050, 075 and 100 air handler blower section can be rotated 180° to change the discharge pattern. This modification must be done in the field and requires an addition of kit. See unit installer's guide.

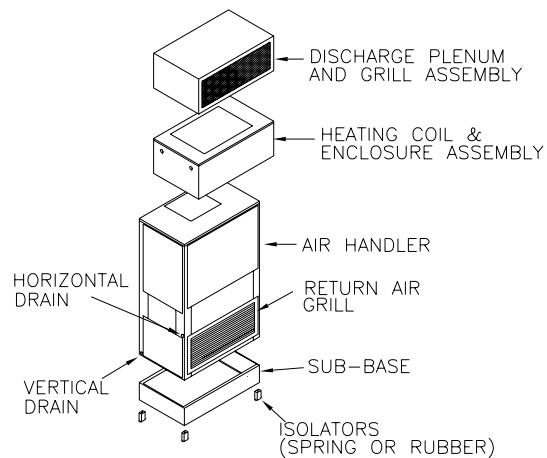
Typical Horizontal Air Handler Application



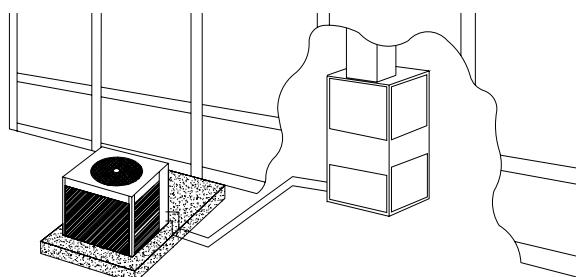
Low Ambient Cooling

As manufactured, these units can operate to 50°F (10°C) in the cooling mode of operation. An accessory head pressure control will allow operation to 0°F (-17.8°C) outdoor ambient. When using these units with control systems such as bypass changeover/Variable Air Volume, make sure you consider the requirement for a head pressure control to allow low ambient cooling.

Typical Vertical Air Handler Application



Typical Split System Application



Selection Procedure

Cooling Capacity

Step 1 — Calculate the building's total and sensible cooling loads at design conditions.

Step 2 — Size the equipment using Table PD-1. Match the cooling loads at design conditions.

Example: The following are the building cooling requirements

a
Electrical Characteristics: 380-415/50/3

b
Summer Design Conditions: Entering Evaporator Coil: 80 DB/67 WB (27 DB/19 WB°C)
Outdoor Ambient: 95°F (35°C)

c
Total Cooling Load: 75 MBh (22kW)

d
Sensible Cooling Load: 53 MBh (15.5 kW)

e
Airflow: 2500 cfm (4247 m³/h)
External Static Pressure: 0.77 in. wg (193 Pa)

Table PD-1 shows that a TWA075A matched with a TWE075A has a gross cooling capacity of 85.1 MBh (24.9 kW) and 60.8 MBh (17.8 kW) sensible capacity at 95 DB (35°C) ambient and 2500 cfm (4247 m³/h) and 80 DB/67 WB (27 DB/19 WB) air entering the evaporator.

To find the net cooling capacities, fan motor heat must be subtracted. Determine the total unit static pressure:

External Static	0.77 in (193 Pa)
Standard Filter	0.10 in (25 Pa)
Supplementary Electric Heat	0.23 in (57 Pa)
Total Static Pressure	1.10 in (275 Pa)

Note: The Evaporator Fan Performance Table has included the effect of a 1 in. (250 Pa) filter already. Therefore, the actual Total Static Pressure is $1.10 - 0.10 = 1.00$ in. ($275 - 25 = 250$ Pa).

With 2500 cfm (4247 m³/h) and 1.00 inches (250 Pa), Table PD-15 shows a 1.07 bhp (0.8 kW).

Note: The formula below the table can be used to calculate Fan Motor Heat, Constant \times Motor Power = Fan Motor Heat

$$\begin{aligned} 3.5 \times \text{bhp} &= \text{MBh} \\ 3.5 \times 1.07 &= 3.75 \text{ MBh} \\ 1.375 \times (\text{kW}) &= \text{kW} \\ 1.375 \times 0.8 &= 1.1 \text{ kW} \end{aligned}$$

$$\begin{aligned} \text{Net Total Cooling Capacity} &= 85.1 \text{ MBh} - 3.75 = 81.35 \text{ MBh} \\ &= 24.9 \text{ kW} - 1.1 = 23.8 \text{ kW} \end{aligned}$$

$$\begin{aligned} \text{Net Sensible Cooling Capacity} &= 60.8 \text{ MBh} - 3.75 = 57.05 \text{ MBh} \\ &= 17.8 \text{ MBh} - 1.1 = 16.7 \text{ kW} \end{aligned}$$

Heating Capacity

Step 1 — Calculate the building heating load using the Trane calculation form or any other standard accepted method.

Step 2 — Size the equipment using Table PD-9 to match the heating loads at design conditions. The following are building heating requirements:

a
Total Heating Load: 110 MBh (32.2 kW)

b
Outdoor Ambient (Winter): 17°F (-8.3°C) DB

c
Indoor Return Temperature: 70°F (21.1°C) DB

d
Airflow: 2500 cfm (4247 m³/h)

Table PD-9 indicates the mechanical heating portion of the heat pump will provide 49.1 MBh (14.4 kW) for the winter design conditions.

Step 3 — Because 49.1 MBh (14.4 kW) is less than the building's required heating capacity, a supplementary heater must be selected. $110 - 49.1 = 60.9$ MBh ($32.2 - 14.4 = 17.8$ kW) minimum heater capacity.

From Table PD-25, the 24.22 kW heater has a capacity of 82,670 Btu. From Table ED-5, the 24.22 kW heater at 400V indicates the heater model number is BAYHTRL435A. This heater will be adequate to cover the residual heat capacity needed for the application.

Air Delivery Selection

External static pressure drop through the air distribution system has been calculated to be 0.77 inches (192.5 Pa) of water gauge. From Table PD-24 static pressure drop through the electric heater is 0.12 inches (30 Pa) of water ($0.77 + 0.12 = .89$ in.) ($192.5 + 30 = 222.5$ Pa). Enter Table PD-15 for TWE090A4 at 2500 cfm (4247 m³/h) and .90 in. (225 Pa) static pressure. The standard motor at 790 rpm will give the desired airflow.



Model Number Description

Split System Heat Pump Model Nomenclature

T	W	A	0	7	5	A	D	0	0	D	A
1	2	3	4	5	6	7	8	9	10	11	12

Digits 1, 2, 3 - Product Type

TWA = Split System Heat Pump

Digit 8 - Electrical Characteristics

D = 380-415/3/50

Digits 4, 5, 6 - Nominal Gross Cooling Capacity (MBh)

075 = 75
100 = 100
155 = 155
200 = 200

Digits 9, 10 - Factory - Installed Options

00 = No Options
0S = Black Epoxy Coated Coil

Digit 7- Major Development Sequence

A = Single Compressor
B = Dual Compressor

Digit 11- Minor Design Sequence

D = Fourth

Digit 12- Service Digit

A = First

Air Handler Model Nomenclature

T	W	E	0	5	0	A	D	0	0	C	A
1	2	3	4	5	6	7	8	9	10	11	12

Digits 1, 2, 3 - Product Type

TWE = Cooling Convertible

Digit 8 - Electrical Characteristics

D = 380-415/3/50

Digits 4, 5, 6 - Nominal Gross Cooling Capacity (MBh)

050 = 50
075 = 75
100 = 100
155 = 155
200 = 200

Digit 9, 10 - Factory - Installed Options

00 = No Options

Digit 11- Minor Design Sequence

C = Third

Digit 12- Service Digit

A = First

Digit 7- Refrigerant Circuit

A = Single
B = Dual



General Data (Heat Pumps)

Table GD-1 — General Data — Heat Pumps

	TWA075A	TWA100A
Cooling Performance¹		
Gross Cooling Capacity, Btu (kW)		
Matched Air Handler, Btu (kW)	85,000 (24.89)	112,000 (32.79)
Heat Pump Only ² , Btu (kW)	85,000 (24.89)	112,000 (32.79)
ARI Net Cooling Capacity ³	83,000 (24.30)	108,000 (31.62)
System Power kW	7.91	10.27
Heat Pump Only Power kW	7.12	9.32
Heating Performance		
ARI Heating with Matched Air Handler		
High Temperature Capacity, Btu (kW)	81,000 (23.72)	110,000 (32.21)
Low Temperature Capacity, Btu (kW)	49,000 (14.35)	71,000 (20.79)
Compressor		
Number	1	1
Type	3D [®] Scroll	3D [®] Scroll
No. Motors	1	1
Motor HP (kW)	6.25 (4.7)	8.33 (6.21)
Motor RPM	2875	2875
ARI Sound Rating (Bels)⁴	8.8	8.8
System Data⁵		
No. Refrigerant Circuits	1	1
Suction Line, in. (mm) OD	1.375 (34.9)	1.375 (34.9)
Liquid Line, in. (mm) OD	0.500 (12.7)	0.500 (12.7)
Outdoor Coil — Type		
Tube Size, in. (mm) OD	0.375 (9.5)	0.375 (9.5)
Face Area, sq. ft (m ²)	19.2 (1.78)	29.5 (2.74)
Rows	2	2
Fins Per Inch	18	18
Outdoor Fan Type		
No. Used	1	1
Diameter, in. (mm)	26.00 (660.4)	28.00 (711)
Drive Type	Direct	Direct
No. Speeds	1	1
CFM ⁶ , (m ³ /h)	4900 (8325.1)	6700 (11383.30)
No. Motors	1	1
Motor HP (kW)	0.33 (.25)	0.75 (.56)
Motor RPM	925	925
R-22 Refrigerant Charge, lb⁷ (kg)	18.0 (8.16)	31.5 (14.29)

Notes:

1. Cooling Performance is rated at 95°F (35°C) ambient, 80°F (26.7°C) entering dry bulb, 67°F (19.4°C) entering wet bulb and nominal cfm listed. ARI rating cfm is 350 cfm/ton for this product. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to $\pm 20\%$ of nominal cfm. Rated accordance with ARI Standard 340/360-00.
2. Condensing Unit Only Gross Cooling Capacity rated at 45°F (7.2°C) saturated suction temperature and at 95°F (35°C) ambient.
3. ARI Net Cooling Capacity is calculated with matched blower coil and 25 ft (7.2 m) of 1.375, 0.500 OD interconnecting tubing. EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures. Integrated Part Load Value is based on ARI Standard 340/360-00. Units are rated at 80°F (26.7°C) ambient, 80°F (26.7°C) entering dry bulb, and 67°F (19.4°C) entering wet bulb at ARI rated cfm.
4. ARI Sound Rating is rated in accordance with ARI Standard 270 or 370.
5. System Data based on maximum linear length 80 ft (26.7 m). Maximum lift: suction 60 ft (18.3 m) liquid 60 ft (18.3 m). For greater lengths, refer to refrigerant piping applications manual.
6. Outdoor Fan cfm is rated with standard air-dry coil outdoor.
7. Refrigerant (operating) charge is for condensing unit (all circuits) with matching blower coils and 25 ft (7.6 m) of interconnecting refrigerant lines.



General Data

(Heat Pumps)

Table GD-2 General Data — Heat Pumps

	TWA155B	TWA200B
Cooling Performance¹		
Gross Cooling Capacity, Btu (kW)		
Matched Air Handler, Btu (kW)	167,000 (48.9)	218,000 (63.83)
Condensing Unit Only ² , Btu (kW)	167,000 (48.9)	218,000 (63.83)
ARI Net Cooling Capacity ³	162,000 (47.43)	211,000 (61.78)
System Power kW	15.67	21.51
Condensing Unit Power kW	13.91	19.1
Heating Performance		
ARI Heating with Matched Air Handler		
High Temperature Capacity, Btu (kW)	166,000 (48.6)	214,000 (62.66)
Low Temperature Capacity, Btu (kW)	101,000 (29.57)	139,000 (40.70)
Compressor		
Number	2	2
Type	3D® Scroll	3D® Scroll
No. Motors	2	2
Motor HP	6.25 (4.7)	8.33 (6.21)
Motor RPM, (kW)	2875	2875
ARI Sound Rating (Bels)⁴		
	8.8	8.8
System Data⁵		
No. Refrigerant Circuits	2	2
Suction Line, in. (mm) OD	1.375 (34.9)	1.375 (34.9)
Liquid Line, in. (mm) OD	0.500 (12.7)	0.500 (12.7)
Outdoor Coil — Type		
Tube Size, in. (mm) OD	0.375 (9.5)	0.375 (9.5)
Face Area, sq. ft (m ²)	38.4 (3.57)	48 (4.46)
Rows	2	2
Fins Per Inch	18	18
Outdoor Fan Type		
No. Used	2	2
Diameter, in. (mm)	26.00 (660.4)	28.00 (711)
Drive Type	Direct	Direct
No. Speeds	1	1
CFM ⁶ , (m ³ /h)	9800 (16650.2)	13400 (22766.60)
No. Motors	2	2
Motor HP (kW)	0.33 (.25)	0.75 (.56)
Motor RPM	925	925
R-22 Refrigerant Charge, lb⁷ (kg)		
	36.0 (16.33)	48.5 (22.0)

Notes:

1. Cooling Performance is rated at 95°F (35°C) ambient, 80°F (26.7°C) entering dry bulb, 67°F (19.4°C) entering wet bulb and nominal cfm listed. ARI rating cfm is 350 cfm/ton for this product. Gross capacity does not include the effect of fan motor heat. ARI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to ±20% of nominal cfm. Rated accordance with ARI Standard 340/360-00.
2. Condensing Unit Only Gross Cooling Capacity rated at 45°F (7.6°C) saturated suction temperature and at 95°F (35°C) ambient.
3. ARI Net Cooling Capacity is calculated with matched blower coil and 25 ft (7.6 m) of 1.375, 0.500 OD interconnecting tubing. EER and/or SEER are rated at ARI conditions and in accordance with DOE test procedures. Integrated Part Load Value is based on ARI Standard 340/360-00. Units are rated at 80°F (26.7°C) ambient, 80°F (26.7°C) entering dry bulb, and 67°F (19.4°C) entering wet bulb at ARI rated cfm.
4. ARI Sound Rating is rated in accordance with ARI Standard 270 or 370.
5. System Data based on maximum linear length 80 ft (26.7 m) Maximum lift: suction 60 ft (18.3 m) liquid 60 ft (18.3 m) For greater lengths, refer to refrigerant piping applications manual.
6. Outdoor Fan cfm is rated with standard air-dry coil outdoor.
7. Refrigerant (operating) charge is for condensing unit (all circuits) with matching blower coils and 25 ft (7.6 m) of interconnecting refrigerant lines.



General Data (Air Handlers)

Table GD-3 — General Data — Air Handlers

	TWE050A	TWE075A	TWE100A	TWE100B
System Data¹				
No. Refrigerant Circuits	1	1	1	2
Suction Line, in. (mm) OD	1.120 (28.4)	1.380 (35.0)	1.380 (35.0)	1.380 (35.0)
Liquid Line, in. (mm) OD	0.38 (9.7)	0.50 (12.7)	0.50 (12.7)	0.50 (12.7)
Indoor Coil — Type				
Tube Size, in. (mm) OD	Plate Fin 0.375 (9.5)	Plate Fin 0.375 (9.5)	Plate Fin 0.375 (9.5)	Plate Fin 0.375 (9.5)
Face Area, sq. ft (m ²)	5.00 (.47)	8.07 (.75)	11.18 (1.0)	11.18 (1.0)
Rows	3	3	4	4
Fins Per Inch	12	12	12	12
Refrigerant Control	Expansion Valve	Expansion Valve	Expansion Valve	Expansion Valve
Drain Connection No.	4	4	4	4
Drain Connection Size, in. (mm)	0.75 (19.0)	0.75 (19.0)	0.75 (19.0)	0.75 (19.0)
Drain Connection Type	PVC	PVC	PVC	PVC
Indoor Fan Type				
No. Used	FC Centrifugal 1	FC Centrifugal 1	FC Centrifugal 1	FC Centrifugal 1
Diameter, in. (mm)	12.0 (304.8)	15.0 (381)	15.0 (381)	15.0 (381)
Width, in. (mm)	12.0 (304.8)	15.0 (381)	15.0 (381)	15.0 (381)
Drive Type	Belt	Belt	Belt	Belt
No. Speeds	1	1	1	1
CFM, (m ³ /h)	1670 (2837)	2500 (4247)	3325 (5649)	3325 (5649)
No. Motors	1	1	1	1
Motor HP (kW)				
— Standard/Oversized	0.75/1.0 (.55/.74)	1.0/1.5 (.74/1.11)	1.5/2.0 (1.11/1.49)	1.5/2.0 (1.11/1.49)
Motor RPM (Standard)	1425	1425	1425	1425
Motor Frame Size (Standard)	56	56	56	56
Filters — Type				
Furnished	Throwaway Yes	Throwaway Yes	Throwaway Yes	Throwaway Yes
No.	1/1	3	4	4
Recommended Size, in. (mm)	16x20x1/20x20x1 (406.4x508x25.4/ 4/508x508x25.4)	16x25x1 (406.4/635/25.4)	16x25x1 (406.4/635/25.4)	16x25x1 (406.4/635/25.4)

Table GD-3 — General Data — Continued

	TWE155B	TWE200B
System Data		
No. Refrigerant Circuits	2	2
Suction Line, in. (mm) OD	1.38 (35.0)	1.38 (35.0)
Liquid Line, in. (mm) OD	0.500 (12.7)	0.500 (12.7)
Indoor Coil — Type		
Tube Size, in. (mm) OD	Plate Fin 0.375 (9.5)	Plate Fin 0.375 (9.5)
Face Area, sq. ft (m ²)	16.33 (1.52)	21.63 (2.01)
Rows	3	3
Fins Per Inch	12	12
Refrigerant Control	Expansion Valve	Expansion Valve
Drain Connection No.	4	4
Drain Connection Size, in. (mm)	1.000 (25.4)	1.000 (25.4)
Drain Connection Type	PVC	PVC
Indoor Fan Type		
No. Used	FC Centrifugal 2	FC Centrifugal 2
Diameter, in. (mm)	15.0 (381)	15.0 (381)
Width, in. (mm)	15.0 (381)	15.0 (381)
Drive Type	Belt	Belt
No. Speeds	1	1
CFM, (m ³ /h)	5000 (8494)	6650 (11297)
No. Motors	1	1
Motor HP (kW)		
— Standard/Oversized	2.0/3.0 (1.49/2.24)	3.0/5.0 (2.24/3.72)
Motor RPM (Standard)	1425	1425
Motor Frame Size (Standard)	145T	184T
Filters — Type		
Furnished	Throwaway Yes	Throwaway Yes
No.	8	4/4
Recommended Size, in. (mm)	15x20x2 (381x508x50.8)	16x20x2/16x25x2 (406.4x508x50.8/406.4x635x50.8)

Notes:

1. ARI certified with various condensing units per ARI Standard 210/240 or 340/360-00 certification program. Refer to Performance Data section in this catalog.



Performance Data (System)

Table PD-1 — Gross Cooling Capacities (MBh) TWA075A Heat Pump with TWE075A Air Handler (I-P)

CFM	Enter. Dry Bulb (°F)	85			95			Ambient Temperature (°F)			105			115											
					Entering Wet Bulb (°F)																				
		Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total									
2250	75	78.1	61.6	86.4	51.4	95.4	35.1	75.4	60.3	83.4	50.1	91.9	33.9	72.3	58.8	79.9	48.7	88.0	32.5	68.7	57.0	75.9	47.1	83.7	31.0
	80	78.4	71.9	86.6	59.4	95.4	46.0	75.9	70.6	83.6	58.1	92.0	44.7	72.8	69.1	80.1	56.6	88.1	43.2	69.4	67.4	76.0	54.8	83.7	41.6
	85	80.2	80.2	86.7	69.6	95.5	56.5	78.0	78.0	83.7	68.2	92.1	55.2	75.4	75.4	80.2	66.7	88.2	53.8	72.3	72.3	76.3	64.9	83.9	52.2
	90	84.3	84.3	87.1	79.9	95.6	67.0	82.0	82.0	84.2	78.6	92.2	65.7	79.3	79.3	80.9	77.0	88.3	64.1	76.1	76.1	77.1	75.4	84.0	62.4
2500	75	79.6	64.6	88.1	50.6	96.9	35.8	76.9	63.2	84.9	49.3	93.4	34.6	73.6	61.6	81.3	47.8	89.3	33.2	69.9	59.8	77.2	46.1	84.8	31.6
	80	80.2	75.9	88.2	62.1	97.0	47.5	77.6	74.5	85.1	60.8	93.4	46.2	74.5	73.0	81.4	59.1	89.4	44.7	70.7	70.6	77.3	57.3	85.0	43.1
	85	82.9	82.9	88.3	73.2	97.1	59.0	80.6	80.6	85.2	71.8	93.6	57.7	77.8	77.8	81.6	70.2	89.6	56.3	74.6	74.6	77.6	68.5	85.2	54.7
	90	87.2	87.2	89.0	84.5	97.1	70.3	84.7	84.7	86.1	83.2	93.7	68.9	81.8	81.8	82.6	81.7	89.7	67.4	78.6	78.6	78.6	85.3	65.7	
2750	75	81.0	67.3	89.4	52.3	98.2	36.5	78.1	65.9	86.1	51.0	94.6	35.1	74.8	64.3	82.4	49.5	90.4	33.7	71.0	62.5	78.2	47.8	85.8	32.0
	80	81.8	79.7	89.4	64.6	98.3	48.9	79.1	78.3	86.2	63.2	94.7	47.6	75.7	75.7	82.5	61.6	90.5	46.2	72.5	72.5	78.3	59.8	86.0	44.6
	85	85.3	85.3	89.7	76.6	98.4	61.4	82.8	82.8	86.5	75.3	94.8	60.1	79.9	79.9	82.9	73.7	90.7	58.6	76.6	76.6	78.8	71.9	86.2	57.0
	90	89.7	89.7	90.8	89.1	98.5	73.5	87.1	87.1	87.8	87.7	94.9	72.1	84.1	84.1	84.2	84.2	90.9	70.6	80.6	80.6	80.7	86.4	68.9	
3000	75	82.1	70.0	90.5	54.0	99.3	36.9	79.2	68.6	87.2	52.6	95.6	35.6	75.8	67.0	83.3	51.1	91.3	34.1	71.9	65.1	79.1	49.4	86.6	32.5
	80	82.8	82.8	90.6	67.0	99.4	50.3	80.4	80.4	87.3	65.6	95.7	49.0	77.5	77.5	83.5	64.0	91.5	47.5	74.1	74.1	79.2	62.2	86.9	45.9
	85	87.4	87.4	90.9	80.0	99.5	63.7	84.8	84.8	87.7	78.6	95.9	62.4	81.7	81.7	84.0	77.0	91.6	60.7	78.3	78.3	79.9	75.2	87.0	59.0
	90	91.9	91.9	92.0	92.0	99.7	76.6	89.2	89.2	89.3	89.3	96.0	75.2	86.0	86.0	86.1	86.1	91.8	73.6	82.5	82.5	82.6	82.6	87.3	71.9

Note: All temperatures are in degrees Fahrenheit. Airflow is in cfm.

Table PD-1— Gross Cooling Capacities (kW) TWA075A Heat Pump with TWE075A Air Handler (SI)

m ³ /h	Enter. Dry Bulb (°C)	29.4			35.0			Ambient Temperature (°C)			40.6			46.1											
					Entering Wet Bulb (°C)																				
		Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total	Sens.	Total									
3823	24	22.9	18.0	25.3	15.0	27.9	10.3	22.1	17.7	24.4	14.7	26.9	9.9	21.2	17.2	23.4	14.3	25.8	9.5	20.1	16.7	22.2	13.8	24.5	9.1
	27	23.0	21.1	25.4	17.4	27.9	13.5	22.2	20.7	24.5	17.0	26.9	13.1	21.3	20.2	23.4	16.6	25.8	12.7	20.3	19.7	22.3	16.0	24.5	12.2
	29	23.5	23.5	25.4	20.4	28.0	16.5	22.8	22.8	24.5	20.0	27.0	16.2	22.1	22.1	23.5	19.5	25.8	15.7	21.2	21.2	22.3	19.0	24.6	15.3
	32	24.7	24.7	25.5	23.4	28.0	19.6	24.0	24.0	24.7	23.0	27.0	19.3	23.2	23.2	23.7	22.6	25.9	18.8	22.3	22.3	22.6	22.1	24.6	18.3
4248	24	23.3	18.9	25.8	14.8	28.4	10.5	22.5	18.5	24.9	14.4	27.3	10.1	21.6	18.0	23.8	14.0	26.2	9.7	20.5	17.5	22.6	13.5	24.8	9.2
	27	23.5	22.2	25.8	18.2	28.4	13.9	22.7	21.8	24.9	17.8	27.4	13.5	21.8	21.4	23.8	17.3	26.2	13.1	20.7	20.7	22.6	16.8	24.9	12.6
	29	24.3	24.3	25.9	21.4	28.4	17.3	23.6	23.6	25.0	21.0	27.4	16.9	22.8	22.8	23.9	20.6	26.2	16.5	21.8	21.8	22.7	20.0	24.9	16.0
	32	25.5	25.5	26.1	24.8	28.4	20.6	24.8	24.8	25.2	24.4	27.4	20.2	24.0	24.0	24.2	23.9	26.3	19.7	23.0	23.0	23.0	25.0	19.2	
4672	24	23.7	19.7	26.2	15.3	28.8	10.7	22.9	19.3	25.2	14.9	27.7	10.3	21.9	18.8	24.1	14.5	26.5	9.9	20.8	18.3	22.9	14.0	25.1	9.4
	27	24.0	23.3	26.2	18.9	28.8	14.3	23.2	22.9	25.3	18.5	27.7	13.9	22.2	22.2	24.2	18.0	26.5	13.5	21.2	21.2	22.9	17.5	25.2	13.0
	29	25.0	25.0	26.3	22.4	28.8	18.0	24.3	24.3	25.3	22.0	27.8	17.6	23.4	23.4	24.3	21.6	26.6	17.2	22.4	22.4	23.1	21.1	25.2	16.7
	32	26.3	26.3	26.6	26.1	28.8	21.5	25.5	25.5	25.7	25.7	27.8	21.1	24.6	24.6	24.6	24.6	26.6	20.7	23.6	23.6	23.6	25.3	20.2	
5097	24	24.0	20.5	26.5	15.8	29.1	10.8	23.2	20.1	25.5	15.4	28.0	10.4	22.2	19.6	24.4	15.0	26.7	10.0	21.1	19.1	23.1	14.5	25.4	9.5
	27	24.3	24.3	26.5	19.6	29.1	14.7	23.5	23.5	25.6	19.2	28.0	14.4	22.7	22.7	24.5	18.7	26.8	13.9	21.7	21.7	23.2	18.2	25.4	13.4
	29	25.6	25.6	26.6	23.4	29.1	18.7	24.8	24.8	25.7	23.0	28.1	18.3	23.9	23.9	24.6	22.5	26.8	17.8	22.9	22.9	23.4	22.0	25.5	17.3
	32	26.9	26.9	26.9	26.9	29.2	22.4	26.1	26.1	26.1	28.1	22.0	25.2	25.2	25.2	25.2	26.9	21.6	24.2	24.2	24.2	25.6	21.1		

Note: All temperatures are in degrees Celsius. Airflow is in liters per second.

Performance Data (System)

Table PD-2 — Gross Cooling Capacities (MBh) TWA100A Heat Pump with TWE100A Air Handler (I-P)

CFM	85			95			105			115		
	Enter. Dry Bulb			Entering Wet Bulb (°F)			Ambient Temperature (°F)					
	61	67	73	61	67	73	61	67	73	61	67	73
3000	(°F)	Total	Sens.	Total	Sens.	Total	Total	Sens.	Total	Total	Sens.	Total
75	103.1	81.2	113.7	68.1	125.2	46.1	99.3	79.2	109.5	66.4	120.5	44.4
80	103.4	94.5	113.9	77.5	125.1	59.9	99.7	92.6	109.7	75.6	120.5	58.2
85	105.4	105.4	113.9	90.8	125.2	73.3	102.2	102.2	109.7	88.8	120.6	71.5
90	110.6	110.6	114.3	103.9	125.3	86.6	107.3	107.3	110.2	102.0	120.7	84.8
3325												
75	105.0	84.7	115.8	66.1	127.2	46.9	101.1	82.8	111.4	64.3	122.4	45.3
80	105.6	99.3	115.9	80.8	127.1	61.8	101.8	97.4	111.6	78.9	122.4	60.0
85	108.7	108.7	115.9	95.1	127.2	76.3	105.4	105.4	111.6	93.2	122.5	74.5
90	114.1	114.1	116.6	109.5	127.3	90.7	110.6	110.6	112.5	107.6	122.6	88.9
3650												
75	106.6	88.1	117.4	68.2	128.8	47.8	102.6	86.1	113.0	66.3	123.9	46.0
80	107.6	103.9	117.6	84.0	128.8	63.5	103.7	102.0	113.1	82.1	123.9	61.7
85	111.6	111.6	117.6	99.3	128.9	79.1	108.1	108.1	113.2	97.3	124.1	77.3
90	117.1	117.1	118.7	114.9	129.0	94.7	113.5	113.5	114.5	113.0	124.2	92.9
3975												
75	108.1	91.4	118.9	70.1	130.2	48.3	103.9	89.3	114.3	68.3	125.2	46.5
80	109.4	108.4	119.0	87.0	130.3	65.2	105.0	105.0	114.4	84.9	125.3	63.3
85	114.2	114.2	119.1	103.3	130.4	81.9	110.6	110.6	114.7	101.3	125.4	80.1
90	119.9	119.9	120.7	120.2	130.4	98.3	116.2	116.2	116.1	116.1	125.4	96.3

Note: All temperatures are in degrees Fahrenheit. Airflow is in cfm.

Table PD-2 — Gross Cooling Capacities (kW) TWA100A Heat Pump with TWE100A Air Handler (SI)

m³/h	29.4			35.0			40.6			46.1		
	Enter. Dry Bulb			Entering Wet Bulb (°C)			Ambient Temperature (°C)					
	16.1	19.4	22.8	16.1	19.4	22.8	16.1	19.4	22.8	16.1	19.4	22.8
5097	(°C)	Total	Sens.	Total	Sens.	Total	Total	Sens.	Total	Total	Sens.	Total
24	30.2	23.8	33.3	19.9	36.6	13.5	29.1	23.2	32.1	19.4	35.3	13.0
27	30.3	27.7	33.3	22.7	36.6	17.5	29.2	27.1	32.1	22.1	35.3	17.0
29	30.9	30.9	33.3	26.6	36.7	21.5	29.9	29.9	32.1	26.0	35.3	20.9
32	32.4	32.4	33.5	30.4	36.7	25.4	31.4	31.4	32.3	29.9	35.3	24.8
5649												
24	30.7	24.8	33.9	19.4	37.2	13.7	29.6	24.2	32.6	18.8	35.8	13.3
27	30.9	29.1	33.9	23.7	37.2	18.1	29.8	28.5	32.7	23.1	35.8	17.6
29	31.8	31.8	33.9	27.8	37.3	22.3	30.9	30.9	32.7	27.3	35.9	21.8
32	33.4	33.4	34.1	32.1	37.3	26.6	32.4	32.4	32.9	31.5	35.9	26.0
6201												
24	31.2	25.8	34.4	20.0	37.7	14.0	30.0	25.2	33.1	19.4	36.3	13.5
27	31.5	30.4	34.4	24.6	37.7	18.6	30.4	29.9	33.1	24.0	36.3	18.1
29	32.7	32.7	34.4	29.1	37.8	23.2	31.7	31.7	33.2	28.5	36.3	22.6
32	34.3	34.3	34.8	33.7	37.8	27.7	33.2	33.2	33.5	33.1	36.4	27.2
6754												
24	31.6	26.7	34.8	20.5	38.1	14.2	30.4	26.2	33.5	20.0	36.7	13.6
27	32.0	31.7	34.8	25.5	38.1	19.1	30.8	30.8	33.5	24.9	36.7	18.5
29	33.4	33.4	34.9	30.2	38.2	24.0	32.4	32.4	33.6	29.7	36.7	23.4
32	35.1	35.1	35.3	35.2	38.2	28.8	34.0	34.0	34.0	34.0	36.7	28.2

Note: All temperatures are in degrees Celsius. Airflow is in liters per second.



Performance Data (System)

Table PD-3 — Gross Cooling Capacities (MBh) TWA155B Heat Pump with TWE155B Air Handler (I-P)

		85			95			Ambient Temperature (°F)			105			115											
CFM	Enter. Dry Bulb (°F)	Enter. Dry Bulb			Enter. Dry Bulb			Entering Wet Bulb (°F)			Enter. Dry Bulb			Enter. Dry Bulb											
		61	67	73	61	67	73	61	67	73	61	67	73	61	67	73									
4500	75	153.9	122.2	170.3	101.7	187.8	69.2	148.7	119.6	164.4	99.3	181.0	66.9	142.5	116.5	157.4	96.5	173.3	64.2	135.4	113.0	149.5	93.3	164.6	61.2
	80	154.6	142.7	170.6	117.7	187.8	90.9	149.6	140.2	164.7	115.2	181.1	88.4	143.6	137.2	157.6	111.9	173.4	85.5	136.8	133.8	149.8	108.5	164.9	82.4
	85	158.5	158.5	170.8	138.0	188.1	112.0	154.2	154.2	165.0	135.4	181.4	109.5	149.0	149.0	158.1	132.3	173.8	106.7	143.0	143.0	150.3	128.9	165.3	103.5
	90	166.7	166.7	171.7	158.7	188.2	132.8	162.1	162.1	166.0	156.1	181.6	130.1	156.7	156.7	159.3	153.1	174.0	127.1	150.5	150.5	152.0	149.8	165.5	123.8
5000	75	157.0	128.0	173.4	100.2	190.8	70.5	151.6	125.3	167.3	97.7	183.8	68.1	145.1	122.2	160.0	94.7	175.8	65.4	137.8	118.6	152.0	91.4	166.9	62.2
	80	158.1	150.6	173.5	122.9	190.9	94.0	152.9	148.0	167.4	120.2	184.0	91.4	146.8	145.0	160.3	117.1	176.1	88.5	139.6	139.6	152.3	113.6	167.3	85.4
	85	163.9	163.9	174.0	145.2	191.2	117.0	159.3	159.3	167.9	142.5	184.3	114.5	153.7	153.7	160.8	139.4	176.5	111.6	147.4	147.4	152.9	135.9	167.7	108.5
	90	172.3	172.3	175.4	168.0	191.4	139.5	167.5	167.5	169.6	165.3	184.5	136.8	161.7	161.7	162.9	162.3	176.7	133.7	155.2	155.2	155.4	155.4	168.0	130.4
5500	75	159.6	133.5	176.0	103.6	193.4	71.9	154.0	130.8	169.6	101.0	186.1	69.3	147.3	127.6	162.2	98.0	177.9	66.3	139.8	124.0	153.9	94.7	168.8	63.2
	80	161.2	158.2	176.2	128.0	193.5	96.9	156.0	155.6	169.9	125.2	186.4	94.3	149.6	149.6	162.5	122.0	178.3	91.4	143.2	143.2	154.3	118.5	169.3	88.2
	85	168.5	168.5	176.7	152.1	193.8	121.9	163.6	163.6	170.5	149.4	186.8	119.3	157.8	157.8	163.2	146.2	178.4	116.0	151.2	151.2	155.2	142.8	169.6	112.6
	90	177.2	177.2	178.8	177.0	194.1	145.9	172.1	172.1	172.3	172.3	187.0	143.2	166.1	166.1	166.2	166.2	179.0	140.1	159.3	159.3	159.5	159.5	170.1	136.7
6000	75	161.7	138.8	178.2	106.8	195.5	72.8	156.0	136.0	171.6	104.2	188.1	70.2	149.3	132.8	164.1	101.2	179.7	67.2	141.7	129.2	155.6	97.9	170.4	64.0
	80	163.6	163.6	178.4	132.8	195.7	99.7	158.8	158.8	172.0	130.0	188.4	97.1	152.9	152.9	164.4	126.8	180.1	94.2	146.3	146.3	156.1	123.2	171.0	91.0
	85	172.6	172.6	179.1	158.8	196.0	126.5	167.5	167.5	172.7	156.1	188.6	123.4	161.4	161.4	165.4	152.9	180.4	120.3	154.6	154.6	157.3	149.4	171.4	116.9
	90	181.5	181.5	181.7	181.7	196.3	152.1	176.2	176.2	176.4	176.4	189.1	149.3	169.9	169.9	170.1	170.1	180.9	146.2	162.9	163.1	163.1	171.9	142.8	

Note: All temperatures are in degrees Fahrenheit. Airflow is in cfm.

Table PD-3 — Gross Cooling Capacities (kW) TWA155B Heat Pump with TWE155B Air Handler (SI)

		29.4			35.0			Ambient Temperature (°C)			40.6			46.1											
m³/h	Enter. Dry Bulb (°C)	Enter. Dry Bulb			Enter. Dry Bulb			Entering Wet Bulb (°C)			Enter. Dry Bulb			Enter. Dry Bulb											
		16.1	19.4	22.8	16.1	19.4	22.8	16.1	19.4	22.8	16.1	19.4	22.8	16.1	19.4	22.8									
7646	24	45.1	35.8	49.9	29.8	55.0	20.3	43.5	35.0	48.1	29.1	53.0	19.6	41.7	34.1	46.1	28.2	50.7	18.8	39.6	33.1	43.8	27.3	48.2	17.9
	27	45.3	41.8	50.0	34.5	55.0	26.6	43.8	41.0	48.2	33.7	53.0	25.9	42.0	40.2	46.1	32.8	50.8	25.0	40.1	39.2	43.9	31.8	48.3	24.1
	29	46.4	46.4	50.0	40.4	55.1	32.8	45.1	45.1	48.3	39.6	53.1	32.1	43.6	43.6	46.3	38.7	50.9	31.2	41.9	41.9	44.0	37.7	48.4	30.3
	32	48.8	48.8	50.3	46.5	55.1	38.9	47.5	47.5	48.6	45.7	53.2	38.1	45.9	45.9	46.7	44.8	50.9	37.2	44.1	44.1	44.5	43.9	48.5	36.3
8495	24	46.0	37.5	50.8	29.3	55.9	20.7	44.4	36.7	49.0	28.6	53.8	19.9	42.5	35.8	46.9	27.7	51.5	19.1	40.3	34.7	44.5	26.8	48.9	18.2
	27	46.3	44.1	50.8	36.0	55.9	27.5	44.8	43.3	49.0	35.2	53.9	26.8	43.0	42.4	46.9	34.3	51.6	25.9	40.9	40.9	44.6	33.3	49.0	25.0
	29	48.0	48.0	50.9	42.5	56.0	34.3	46.6	46.6	49.2	41.7	54.0	33.5	45.0	45.0	47.1	40.8	51.7	32.7	43.2	43.2	44.8	39.8	49.1	31.8
	32	50.5	50.5	51.3	49.2	56.0	40.8	49.0	49.0	49.6	48.4	54.0	40.0	47.4	47.4	47.7	47.5	51.7	39.2	45.4	45.4	45.5	45.5	49.2	38.2
9345	24	46.7	39.1	51.5	30.3	56.6	21.0	45.1	38.3	49.7	29.6	54.5	20.3	43.1	37.4	47.5	28.7	52.1	19.4	40.9	36.3	45.1	27.7	49.4	18.5
	27	47.2	46.3	51.6	37.5	56.7	28.4	45.7	45.6	49.7	36.7	54.6	27.6	43.8	43.8	47.6	35.7	52.2	26.8	41.9	41.9	45.2	34.7	49.6	25.8
	29	49.3	49.3	51.7	44.5	56.8	35.7	47.9	47.9	49.9	43.7	54.7	34.9	46.2	46.2	47.8	42.8	52.2	34.0	44.3	44.3	45.4	41.8	49.7	33.0
	32	51.9	51.9	52.3	51.8	56.8	42.7	50.4	50.4	50.4	50.4	54.8	41.9	48.6	48.6	48.7	48.7	52.4	41.0	46.6	46.7	46.7	49.8	40.0	
10194	24	47.4	40.6	52.2	31.3	57.2	21.3	45.7	39.8	50.3	30.5	55.1	20.5	43.7	38.9	48.0	29.6	52.6	19.7	41.5	37.8	45.6	28.7	49.9	18.8
	27	47.9	47.9	52.2	38.9	57.3	29.2	46.5	46.5	50.4	38.1	55.2	28.4	44.8	44.8	48.2	37.1	52.7	27.6	42.8	42.8	45.7	36.1	50.1	26.6
	29	50.5	50.5	52.4	46.5	57.4	37.0	49.0	49.0	50.6	45.7	55.2	36.1	47.3	47.3	48.4	44.8	52.8	35.2	45.3	45.3	46.0	43.7	50.2	34.2
	32	53.2	53.2	53.2	53.2	57.5	44.5	51.6	51.6	51.6	55.4	43.7	49.8	49.8	49.8	49.8	53.0	42.8	47.7	47.7	47.8	47.8	50.3	41.8	

Note: All temperatures are in degrees Celsius. Airflow is in liters per second.



Performance Data (System)

Table PD-4 — Gross Cooling Capacities (MBh) TWA200B Heat Pump with TWE200B Air Handler (I-P)

CFM	85			95			105			115			
	Enter. Dry Bulb			Entering Wet Bulb (°F)			Ambient Temperature (°F)						
	61	67	73	61	67	73	61	67	73	61	67	73	
6000	(°F)	Total	Sens.	Total	Sens.	Total	Total	Sens.	Total	Sens.	Total	Sens.	
6000	75	203.1	161.9	223.6	134.6	245.6	90.5	195.3	158.0	215.0	131.1	236.2	87.2
	80	204.0	189.2	223.9	154.6	245.5	118.7	196.4	185.3	215.4	150.9	236.2	115.1
	85	209.2	209.2	224.1	181.3	245.8	146.0	202.6	202.6	215.6	177.5	236.5	142.5
	90	219.3	219.3	225.1	208.3	246.0	173.3	212.6	212.6	216.9	204.5	236.8	169.7
6675													
6675	75	206.9	169.4	227.5	131.5	249.5	92.2	198.8	165.3	218.7	127.8	239.7	88.9
	80	208.4	199.4	227.8	161.7	249.5	122.5	200.6	195.4	218.8	157.5	239.8	119.0
	85	215.7	215.7	228.0	190.5	249.7	152.4	208.8	208.8	219.3	186.6	240.1	148.8
	90	226.3	226.3	229.8	220.2	249.8	181.5	219.2	219.2	221.5	216.4	240.3	177.7
7350													
7350	75	210.0	176.5	230.7	135.8	252.6	93.8	201.8	172.4	221.7	132.1	242.7	90.2
	80	212.3	209.2	230.9	167.8	252.7	126.2	203.5	203.5	221.9	163.9	242.8	122.6
	85	221.4	221.4	231.4	199.3	253.0	158.4	214.2	214.2	222.6	195.4	243.2	154.8
	90	232.3	232.3	234.1	231.7	253.1	189.6	225.0	225.0	224.8	224.8	243.4	185.8
8025													
8025	75	212.7	183.3	233.5	140.0	255.3	95.0	204.4	179.2	224.2	136.2	245.1	91.4
	80	215.3	215.3	233.7	174.0	255.5	129.7	208.1	208.1	224.5	170.0	245.4	126.1
	85	226.5	226.5	234.4	207.9	255.8	164.2	219.0	219.0	225.5	203.9	245.7	160.6
	90	237.7	237.7	237.6	237.6	256.0	197.4	230.1	230.1	230.0	230.0	246.0	193.5

Note: All temperatures are in degrees Fahrenheit. Airflow is in cfm.

Table PD-4 — Gross Cooling Capacities (kW) TWA200B Heat Pump with TWE200B Air Handler (SI)

m³/h	29.4			35.0			40.6			46.1			
	Enter. Dry Bulb			Entering Wet Bulb (°C)			Ambient Temperature (°C)						
	16.1	19.4	22.8	16.1	19.4	22.8	16.1	19.4	22.8	16.1	19.4	22.8	
10194	(°C)	Total	Sens.	Total	Sens.	Total	Total	Sens.	Total	Total	Sens.	Total	
10194	24	59.5	47.4	65.5	39.4	71.9	26.5	57.2	46.3	63.0	38.4	69.2	25.5
	27	59.7	55.4	65.6	45.3	71.9	34.7	57.5	54.3	63.1	44.2	69.2	33.7
	29	61.2	61.2	65.6	53.1	72.0	42.8	59.3	59.3	63.1	52.0	69.2	41.7
	32	64.2	64.2	65.9	61.0	72.0	50.7	62.2	62.2	63.5	59.9	69.3	49.7
11341													
11341	24	60.6	49.6	66.6	38.5	73.0	27.0	58.2	48.4	64.0	37.4	70.2	26.0
	27	61.0	58.4	66.7	47.3	73.0	35.9	58.7	57.2	64.1	46.1	70.2	34.8
	29	63.2	63.2	66.8	55.8	73.1	44.6	61.1	61.1	64.2	54.6	70.3	43.6
	32	66.2	66.2	67.3	64.5	73.1	53.1	64.2	64.2	64.8	63.4	70.4	52.0
12488													
12488	24	61.5	51.7	67.6	39.8	74.0	27.5	59.1	50.5	64.9	38.7	71.1	26.4
	27	62.2	61.2	67.6	49.1	74.0	36.9	59.6	59.6	65.0	48.0	71.1	35.9
	29	64.8	64.8	67.8	58.4	74.1	46.4	62.7	62.7	65.2	57.2	71.2	45.3
	32	68.0	68.0	68.5	67.8	74.1	55.5	65.9	65.9	65.8	65.8	71.3	54.4
13634													
13634	24	62.3	53.7	68.4	41.0	74.8	27.8	59.8	52.5	65.7	39.9	71.8	26.8
	27	63.0	63.0	68.4	51.0	74.8	38.0	60.9	60.9	65.7	49.8	71.8	36.9
	29	66.3	66.3	68.6	60.9	74.9	48.1	64.1	64.1	66.0	59.7	72.0	47.0
	32	69.6	69.6	69.6	69.6	74.9	57.8	67.4	67.4	67.3	67.3	72.0	56.7

Note: All temperatures are in degrees Celsius. Airflow is in liters per second.



Performance Data

(TWA075A)

Table PD-5 — Gross Cooling Performance (MBh) TWA075A Heat Pump Only (I-P)

ODTemp °F		Suction Reference Temperature °F				
		30	35	40	45	50
65	Head press PSIG	166	171	177	183	189
	Cap. Btuh/1000	72.2	79.8	87.7	95.9	104.3
	OD Unit KW	4.91	5.01	5.13	5.25	5.39
75	Head press PSIG	192	198	204	210	217
	Cap. Btuh/1000	70.3	77.5	85.0	92.7	100.5
	OD Unit KW	5.42	5.54	5.66	5.80	5.94
85	Head press PSIG	220	227	233	240	247
	Cap. Btuh/1000	67.5	74.4	81.5	88.8	96.2
	OD Unit KW	6.01	6.15	6.28	6.42	6.57
95	Head press PSIG	251	258	265	272	279
	Cap. Btuh/1000	64.1	70.7	77.4	84.2	91.2
	OD Unit KW	6.71	6.84	6.98	7.12	7.27
105	Head press PSIG	284	291	298	306	313
	Cap. Btuh/1000	60.2	66.3	72.6	79.1	85.7
	OD Unit KW	7.48	7.61	7.75	7.89	8.04
115	Head press PSIG	320	327	334	342	350
	Cap. Btuh/1000	55.9	61.6	67.5	73.5	79.8
	OD Unit KW	8.32	8.45	8.59	8.72	8.87

Table PD-5 — Gross Cooling Performance (kW) TWA075A Heat Pump Only (SI)

ODTemp °C		Suction Reference Temperature °C				
		-1.1	1.7	4.4	7.2	10
18.3	Head pressure (kPa)	1142	1180	1220	1262	1305
	Capacity (kW)	21.2	23.4	25.7	28.1	30.5
	OD Unit Power (kW)	4.91	5.01	5.13	5.25	5.39
23.9	Head pressure (kPa)	1324	1364	1406	1449	1494
	Capacity (kW)	20.6	22.7	24.9	27.1	29.4
	OD Unit Power (kW)	5.42	5.54	5.66	5.80	5.94
29.4	Head pressure (kPa)	1519	1563	1607	1653	1701
	Capacity (kW)	19.8	21.8	23.9	26.0	28.2
	OD Unit Power (kW)	6.01	6.15	6.28	6.42	6.57
35.0	Head pressure (kPa)	1733	1778	1825	1873	1922
	Capacity (kW)	18.8	20.7	22.7	24.7	26.7
	OD Unit Power (kW)	6.71	6.84	6.98	7.12	7.27
40.6	Head pressure (kPa)	1961	2009	2057	2107	2159
	Capacity (kW)	17.6	19.4	21.3	23.2	25.1
	OD Unit Power (kW)	7.48	7.61	7.75	7.89	8.04
46.1	Head pressure (kPa)	2206	2255	2305	2357	2411
	Capacity (kW)	16.4	18.0	19.8	21.5	23.4
	OD Unit Power (kW)	8.32	8.45	8.59	8.72	8.87

Performance Data

(TWA100A)

Table PD-6— Gross Cooling Performance (MBh) TWA100A Heat Pump Only (I-P)

ODTemp °F	Suction Reference Temperature °F					
	30	35	40	45	50	55
65	Head press PSIG	164	169	174	179	185
	Cap. Btuh/1000	99.4	109.5	120.0	130.9	142.2
	OD Unit KW	6.39	6.53	6.67	6.83	6.99
75	Head press PSIG	188	193	199	204	210
	Cap. Btuh/1000	95.1	104.5	114.4	124.8	135.5
	OD Unit KW	7.06	7.21	7.36	7.52	7.69
85	Head press PSIG	215	220	226	232	238
	Cap. Btuh/1000	90.3	99.2	108.6	118.5	128.7
	OD Unit KW	7.85	8.01	8.18	8.35	8.54
95	Head press PSIG	245	250	256	263	269
	Cap. Btuh/1000	85.2	93.7	102.7	112.1	121.8
	OD Unit KW	8.79	8.95	9.13	9.32	9.51
105	Head press PSIG	277	283	289	296	302
	Cap. Btuh/1000	79.8	88.0	96.6	105.5	114.7
	OD Unit KW	9.84	10.03	10.22	10.41	10.61
115	Head press PSIG	312	318	325	331	338
	Cap. Btuh/1000	74.2	82.1	90.3	98.8	107.6
	OD Unit KW	11.02	11.22	11.42	11.63	11.83

Table PD-6 — Gross Cooling Performance (kW) TWA100A Heat Pump Only (SI)

ODTemp °C	Suction Reference Temperature °C					
	-1.1	1.7	4.4	7.2	10	12.8
18.3	Head pressure (kPa)	1129	1163	1199	1237	1276
	Capacity (kW)	29.1	32.1	35.1	38.3	41.6
	OD Unit Power (kW)	6.39	6.53	6.67	6.83	6.99
23.9	Head pressure (kPa)	1299	1334	1370	1409	1449
	Capacity (kW)	27.8	30.6	33.5	36.5	39.7
	OD Unit Power (kW)	7.06	7.21	7.36	7.52	7.69
29.4	Head pressure (kPa)	1483	1520	1559	1600	1643
	Capacity (kW)	26.4	29.1	31.8	34.7	37.7
	OD Unit Power (kW)	7.85	8.01	8.18	8.35	8.54
35.0	Head pressure (kPa)	1688	1726	1767	1810	1855
	Capacity (kW)	25.0	27.4	30.1	32.8	35.7
	OD Unit Power (kW)	8.79	8.95	9.13	9.32	9.51
40.6	Head pressure (kPa)	1910	1950	1993	2038	2085
	Capacity (kW)	23.4	25.8	28.3	30.9	33.6
	OD Unit Power (kW)	9.84	10.03	10.22	10.41	10.61
46.1	Head pressure (kPa)	2149	2192	2238	2285	2333
	Capacity (kW)	21.7	24.0	26.4	28.9	31.5
	OD Unit Power (kW)	11.02	11.22	11.42	11.63	11.83



Performance Data (TWA155B)

Table PD-7 — Gross Cooling Performance (MBh) TWA155B Heat Pump Only (I-P)

ODTemp °F	Suction Reference Temperature °F					
	30	35	40	45	50	55
65	Head press PSIG	165	170	176	182	188
	Cap. Btuh/1000	142.4	157.4	173.0	189.2	205.9
	OD Unit KW	9.59	9.80	10.02	10.26	10.52
75	Head press PSIG	191	197	203	209	215
	Cap. Btuh/1000	138.7	153.0	167.9	183.1	198.7
	OD Unit KW	10.58	10.82	11.06	11.32	11.59
85	Head press PSIG	219	225	232	238	245
	Cap. Btuh/1000	133.3	147.0	161.1	175.6	190.3
	OD Unit KW	11.75	12.01	12.27	12.54	12.82
95	Head press PSIG	250	257	263	270	277
	Cap. Btuh/1000	126.8	139.8	153.1	166.7	180.6
	OD Unit KW	13.10	13.36	13.63	13.91	14.20
105	Head press PSIG	283	290	297	304	312
	Cap. Btuh/1000	119.1	131.3	143.9	156.7	169.9
	OD Unit KW	14.61	14.87	15.14	15.41	15.70
115	Head press PSIG	319	326	333	340	348
	Cap. Btuh/1000	110.6	122.0	133.7	145.9	158.4
	OD Unit KW	16.26	16.51	16.77	17.04	17.32

Table PD-7 — Gross Cooling Performance (kW) TWA155B Heat Pump Only (SI)

ODTemp °C	Suction Reference Temperature °C					
	-1.1	1.7	4.4	7.2	10.0	12.8
18.3	Head pressure (kPa)	1136	1173	1213	1254	1297
	Capacity (kW)	41.7	46.1	50.7	55.4	60.3
	OD Unit Power (kW)	9.59	9.80	10.02	10.26	10.52
23.9	Head pressure (kPa)	1317	1356	1398	1441	1485
	Capacity (kW)	40.6	44.8	49.1	53.6	58.2
	OD Unit Power (kW)	10.58	10.82	11.06	11.32	11.59
29.4	Head pressure (kPa)	1512	1555	1599	1644	1691
	Capacity (kW)	39.0	43.0	47.2	51.4	55.7
	OD Unit Power (kW)	11.75	12.01	12.27	12.54	12.82
35.0	Head pressure (kPa)	1725	1770	1816	1863	1912
	Capacity (kW)	37.1	40.9	44.8	48.8	52.9
	OD Unit Power (kW)	13.10	13.36	13.63	13.91	14.20
40.6	Head pressure (kPa)	1953	2000	2048	2097	2149
	Capacity (kW)	34.9	38.5	42.1	45.9	49.8
	OD Unit Power (kW)	14.61	14.87	15.14	15.41	15.70
46.1	Head pressure (kPa)	2197	2246	2295	2347	2400
	Capacity (kW)	32.4	35.7	39.2	42.7	46.4
	OD Unit Power (kW)	16.26	16.51	16.77	17.04	17.32



Performance Data (TWA200B)

Table PD-8 — Gross Cooling Performance (MBh) TWA200B Heat Pump Only (I-P)

ODTemp ° F		Suction Reference Temperature °F					
		30	35	40	45	50	55
65	Head press PSIG	173	179	185	191	198	205
	Cap. Btuh/1000	196.4	215.5	235.3	255.8	276.9	298.5
	OD Unit KW	12.94	13.25	13.58	13.93	14.30	14.69
75	Head press PSIG	198	204	211	217	224	232
	Cap. Btuh/1000	187.3	205.2	223.9	243.3	263.4	284.0
	OD Unit KW	14.32	14.65	15.00	15.38	15.79	16.22
85	Head press PSIG	226	233	240	247	254	262
	Cap. Btuh/1000	177.5	194.5	212.3	230.8	249.9	269.5
	OD Unit KW	15.95	16.32	16.71	17.12	17.56	18.01
95	Head press PSIG	257	264	271	278	286	294
	Cap. Btuh/1000	167.2	183.4	200.3	218.0	236.1	254.8
	OD Unit KW	17.84	18.24	18.66	19.10	19.56	20.02
105	Head press PSIG	290	298	305	313	321	330
	Cap. Btuh/1000	156.3	171.9	188.1	205.0	222.3	239.9
	OD Unit KW	19.96	20.40	20.86	21.33	21.80	22.27
115	Head press PSIG	326	334	342	350	359	368
	Cap. Btuh/1000	145.0	160.1	175.7	191.8	208.2	224.8
	OD Unit KW	22.32	22.80	23.30	23.79	24.27	24.73

Table PD-8 — Gross Cooling Performance (kW) TWA200B Heat Pump Only (SI)

ODTemp ° C		Suction Reference Temperature °C					
		-1.1	1.7	4.4	7.2	10.0	12.8
18.3	Head pressure (kPa)	1193	1232	1274	1318	1363	1411
	Capacity (kW)	57.5	63.1	68.9	74.9	81.1	87.4
	OD Unit Power (kW)	12.94	13.25	13.58	13.93	14.30	14.69
23.9	Head pressure (kPa)	1368	1409	1453	1499	1547	1599
	Capacity (kW)	54.8	60.1	65.5	71.2	77.1	83.2
	OD Unit Power (kW)	14.32	14.65	15.00	15.38	15.79	16.22
29.4	Head pressure (kPa)	1561	1605	1652	1701	1752	1805
	Capacity (kW)	52.0	56.9	62.2	67.6	73.2	78.9
	OD Unit Power (kW)	15.95	16.32	16.71	17.12	17.56	18.01
35.0	Head pressure (kPa)	1773	1819	1869	1920	1974	2030
	Capacity (kW)	48.9	53.7	58.7	63.8	69.1	74.6
	OD Unit Power (kW)	17.84	18.24	18.66	19.10	19.56	20.02
40.6	Head pressure (kPa)	2001	2051	2104	2159	2215	2273
	Capacity (kW)	45.8	50.3	55.1	60.0	65.1	70.2
	OD Unit Power (kW)	19.96	20.40	20.86	21.33	21.80	22.27
46.1	Head pressure (kPa)	2248	2302	2358	2416	2475	2536
	Capacity (kW)	42.5	46.9	51.5	56.2	61.0	65.8
	OD Unit Power (kW)	22.32	22.80	23.30	23.79	24.27	24.73



Performance Data (System)

Table PD-9 — Gross Heating Capacities (MBh)
TWA075A Heat Pump with TWE075A Air Handler At 2500 CFM (I-P)

Outdoor Temperature (°F)	Heating Capacity (Btu/1000) At				Total Power in Kilowatts At			
	60	70	75	80	60	70	75	80
-18	33.0	28.7	27.1	25.9	5.6	5.7	5.9	6.0
-13	34.1	30.4	29.0	27.9	5.5	5.7	5.9	6.1
-8	35.6	32.4	31.2	30.3	5.5	5.8	5.9	6.2
-3	37.5	34.8	33.9	33.2	5.5	5.8	6.0	6.3
2	40.0	37.7	37.0	36.4	5.5	5.9	6.1	6.4
7	42.8	41.1	40.5	40.1	5.6	6.0	6.2	6.5
12	46.2	44.9	44.4	44.2	5.6	6.1	6.3	6.6
17	50.0	49.1	48.7	48.5	5.7	6.2	6.5	6.8
22	54.4	53.6	53.4	53.2	5.8	6.3	6.6	7.0
27	59.2	58.6	58.4	58.2	5.9	6.4	6.8	7.1
32	64.5	63.9	63.7	63.5	6.0	6.6	6.9	7.3
37	69.9	69.4	69.1	68.8	6.1	6.7	7.1	7.5
42	75.7	75.1	74.7	74.3	6.2	6.9	7.2	7.6
47	81.8	81.1	80.6	80.1	6.4	7.0	7.4	7.8
52	88.3	87.4	86.8	86.2	6.5	7.2	7.6	8.0
57	95.1	93.9	93.2	92.4	6.7	7.4	7.7	8.1
62	102.0	100.6	99.8	98.9	6.8	7.5	7.9	8.3
67	109.0	107.4	106.5	105.5	7.0	7.7	8.1	8.5
72	116.3	114.5	113.4	112.3	7.2	7.9	8.2	8.6

Table PD-9 — Gross Heating Capacities (kW)
TWA075A Heat Pump with TWE075A Air Handler At 4247 m³/h (SI)

Outdoor Temperature (°C)	Heating Capacity (kW) At				Total Power in Kilowatts At			
	15.6	21.1	23.9	26.7	15.6	21.1	23.9	26.7
-27.8	9.7	8.4	7.9	7.6	5.5	6.0	6.2	6.5
-25.0	10.0	8.9	8.5	8.2	5.6	6.1	6.3	6.6
-22.2	10.4	9.5	9.1	8.9	5.7	6.2	6.5	6.7
-19.4	11.0	10.2	9.9	9.7	5.8	6.3	6.6	6.9
-16.7	11.7	11.0	10.8	10.7	5.9	6.5	6.7	7.0
-13.9	12.5	12.0	11.9	11.7	6.0	6.6	6.9	7.2
-11.1	13.5	13.1	13.0	12.9	6.2	6.7	7.0	7.4
-8.3	14.7	14.4	14.3	14.2	6.3	6.9	7.2	7.5
-5.6	15.9	15.7	15.6	15.6	6.5	7.0	7.4	7.7
-2.8	17.3	17.2	17.1	17.0	6.6	7.2	7.5	7.9
0.0	18.9	18.7	18.7	18.6	6.8	7.4	7.7	8.1
2.8	20.5	20.3	20.2	20.1	6.9	7.6	7.9	8.3
5.6	22.2	22.0	21.9	21.8	7.1	7.8	8.1	8.5
8.3	24.0	23.7	23.6	23.4	7.3	8.0	8.4	8.8
11.1	25.9	25.6	25.4	25.2	7.5	8.2	8.6	9.0
13.9	27.8	27.5	27.3	27.1	7.7	8.4	8.8	9.2
16.7	29.9	29.5	29.2	29.0	7.9	8.7	9.1	9.5
19.4	31.9	31.5	31.2	30.9	8.1	8.9	9.3	9.8
22.2	34.1	33.5	33.2	32.9	8.4	9.2	9.6	10.0

Correction Factors - Other Airflows
 (Table Value x Correction Factor = Value at new airflow)

Airflow 2250 cfm 2750 cfm

 3822 m³/h 4672 m³/h

Heating Capacity x0.99 x1.01

Compressor kW x1.02 x0.98

Values at ARI Rating Conditions of:

70F(21.1C) and 47/43F(8.3/6.1C)(High Temp. Cond.)

70F(21.1C) and 17/15F(-8.3/-9.4C)(Low Temp. Cond.)

Airflow = 2500 cfm (4247 m³/h)

Heating Capacity (High Temp.) = 81,000 (23.72)

Heating Capacity (Low Temp.) = 49,000 (14.35)

Compressor Power (High Temp) = 5.67 kW

Compressor Power (Low Temp) = 4.80 kW

Coeff. Of Perf. (High Temp) = 3.4

Coeff. Of Perf. (Low Temp) = 2.3

Outdoor Fan Power = 550 watts

Indoor Fan Power = 800 watts

Note:

1. Rated with 25 feet of 1-3/8" suction and 1/2" liquid line.



Performance Data (System)

Table PD-10 — Gross Heating Capacities (MBh)
TWA100A Heat Pump with TWE100A Air Handler At 3325 CFM (I-P)

Outdoor Temperature (°F)	Heating Capacity (Btu/1000) At				Total Power in Kilowatts At			
	60	70	75	80	60	70	75	80
-18	20.4	37.3	41.2	43.6	5.7	7.3	7.9	8.5
-13	31.4	41.8	44.6	46.4	6.2	7.5	8.0	8.6
-8	39.0	46.3	48.4	49.7	6.5	7.6	8.1	8.6
-3	45.5	50.8	52.4	53.3	6.8	7.8	8.2	8.7
2	51.8	55.6	56.7	57.3	7.0	7.9	8.4	8.8
7	57.9	60.6	61.3	61.6	7.2	8.0	8.5	9.0
12	64.1	65.8	66.2	66.3	7.3	8.2	8.6	9.1
17	70.4	71.3	71.4	71.3	7.5	8.3	8.7	9.2
22	76.9	77.1	77.0	76.7	7.6	8.4	8.9	9.4
27	83.6	83.3	82.9	82.5	7.8	8.6	9.0	9.5
32	90.7	89.7	89.2	88.7	7.9	8.8	9.2	9.7
37	97.6	96.2	95.5	94.9	8.1	8.9	9.4	9.9
42	104.6	102.9	102.1	101.4	8.2	9.1	9.6	10.1
47	112.0	109.9	109.0	108.2	8.4	9.3	9.7	10.3
52	119.5	117.2	116.2	115.2	8.6	9.5	10.0	10.5
57	127.1	124.6	123.5	122.5	8.8	9.7	10.2	10.7
62	134.8	132.1	130.8	129.7	9.0	9.9	10.4	11.0
67	142.6	139.7	138.3	137.2	9.2	10.1	10.7	11.2
72	150.7	147.5	146.1	144.8	9.4	10.4	10.9	11.5

Table PD-10 — Gross Heating Capacities (kW)
TWA100A Heat Pump with TWE100A Air Handler At 5649 m³/h (SI)

Outdoor Temperature (°C)	Heating Capacity (kW) At				Total Power in Kilowatts At			
	15.6	21.1	23.9	26.7	15.6	21.1	23.9	26.7
-27.8	6.0	10.9	12.1	12.8	5.5	6.0	6.2	6.5
-25.0	9.2	12.2	13.1	13.6	5.6	6.1	6.3	6.6
-22.2	11.4	13.5	14.2	14.6	5.7	6.2	6.5	6.7
-19.4	13.3	14.9	15.3	15.6	5.8	6.3	6.6	6.9
-16.7	15.2	16.3	16.6	16.8	5.9	6.5	6.7	7.0
-13.9	17.0	17.7	17.9	18.0	6.0	6.6	6.9	7.2
-11.1	18.8	19.3	19.4	19.4	6.2	6.7	7.0	7.4
-8.3	20.6	20.9	20.9	20.9	6.3	6.9	7.2	7.5
-5.6	22.5	22.6	22.5	22.5	6.5	7.0	7.4	7.7
-2.8	24.5	24.4	24.3	24.1	6.6	7.2	7.5	7.9
0.0	26.5	26.3	26.1	26.0	6.8	7.4	7.7	8.1
2.8	28.6	28.2	28.0	27.8	6.9	7.6	7.9	8.3
5.6	30.6	30.1	29.9	29.7	7.1	7.8	8.1	8.5
8.3	32.8	32.2	31.9	31.7	7.3	8.0	8.4	8.8
11.1	35.0	34.3	34.0	33.7	7.5	8.2	8.6	9.0
13.9	37.2	36.5	36.2	35.9	7.7	8.4	8.8	9.2
16.7	39.5	38.7	38.3	38.0	7.9	8.7	9.1	9.5
19.4	41.7	40.9	40.5	40.2	8.1	8.9	9.3	9.8
22.2	44.1	43.2	42.8	42.4	8.4	9.2	9.6	10.0

Correction Factors - Other Airflows
 (Table Value x Correction Factor = Value at new airflow)

Airflow	3000 cfm	3675 cfm	Airflow = 3325 cfm (5649 m³/h)
	5097 m³/h	6243 m³/h	Heating Capacity (High Temp.) = 110,000 (32.21)
Heating Capacity	x 0.99	x 1.01	Heating Capacity (Low Temp.) = 71,000 (20.79)
Compressor kW	x 1.02	x 0.98	Compressor Power (High Temp) = 7.59 kW
			Compressor Power (Low Temp) = 6.60 kW

Values at ARI Rating Conditions of:
 70F (21.1C) and 47/43F (8.3/6.1C) (High Temp. Cond.)
 70F (21.1C) and 17/15F (-8.3/-9.4C) (Low Temp. Cond.)

Airflow = 3325 cfm (5649 m³/h)

Heating Capacity (High Temp.) = 110,000 (32.21)

Heating Capacity (Low Temp.) = 71,000 (20.79)

Compressor Power (High Temp) = 7.59 kW

Compressor Power (Low Temp) = 6.60 kW

Coeff. Of Perf. (High Temp) = 3.4

Coeff. Of Perf. (Low Temp) = 2.4

Outdoor Fan Power = 615 watts

Indoor Fan Power = 1,030 watts

Note:

1. Rated with 25 feet of 1-3/8" suction and 1/2" liquid line.



Performance Data (System)

Table PD-11 — Gross Heating Capacities (MBh)
TWA155B Heat Pump with TWE155B Air Handler At 5000 CFM (I-P)

Outdoor Temperature (°F)	Heating Capacity (BTUH/1000) At				Total Power in Kilowatts At			
	60	70	75	80	60	70	75	80
-18	68.8	60.9	58.1	55.9	11.9	12.3	12.5	12.8
-13	71.2	64.2	61.7	59.9	11.9	12.3	12.6	12.9
-8	74.3	68.2	66.2	64.7	11.9	12.4	12.7	13.2
-3	78.2	73.2	71.6	70.5	11.9	12.5	12.9	13.4
2	83.0	79.0	77.8	77.0	11.9	12.7	13.1	13.7
7	88.7	85.7	84.8	84.4	12.0	12.9	13.4	14.0
12	95.5	93.2	92.6	92.4	12.2	13.1	13.7	14.3
17	103.3	101.6	101.2	101.1	12.3	13.4	14.0	14.7
22	112.1	110.9	110.6	110.6	12.5	13.6	14.3	15.1
27	121.8	120.9	120.7	120.6	12.8	14.0	14.7	15.5
32	132.5	131.7	131.4	131.2	13.1	14.3	15.0	15.8
37	143.4	142.6	142.2	141.8	13.3	14.7	15.4	16.2
42	154.8	153.9	153.3	152.7	13.6	15.0	15.8	16.6
47	167.0	165.7	165.0	164.1	14.0	15.4	16.1	17.0
52	179.9	178.2	177.2	176.1	14.3	15.7	16.5	17.3
57	193.3	191.2	189.9	188.6	14.6	16.1	16.9	17.7
62	207.2	204.5	203.0	201.4	15.0	16.4	17.2	18.0
67	221.3	218.2	216.4	214.5	15.3	16.8	17.6	18.4
72	235.8	232.2	230.3	228.2	15.7	17.2	18.0	18.8

Table PD-11 — Gross Heating Capacities (kW)
TWA155B Heat Pump with TWE155B Air Handler At 8494 m³/h (SI)

Outdoor Temperature (°C)	Heating Capacity (kW) At				Total Power in Kilowatts At			
	15.6	21.1	23.9	26.7	15.6	21.1	23.9	26.7
-27.8	20.1	17.8	17.0	16.4	5.5	6.0	6.2	6.5
-25.0	20.9	18.8	18.1	17.5	5.6	6.1	6.3	6.6
-22.2	21.8	20.0	19.4	19.0	5.7	6.2	6.5	6.7
-19.4	22.9	21.4	21.0	20.6	5.8	6.3	6.6	6.9
-16.7	24.3	23.1	22.8	22.6	5.9	6.5	6.7	7.0
-13.9	26.0	25.1	24.8	24.7	6.0	6.6	6.9	7.2
-11.1	28.0	27.3	27.1	27.0	6.2	6.7	7.0	7.4
-8.3	30.2	29.8	29.6	29.6	6.3	6.9	7.2	7.5
-5.6	32.8	32.5	32.4	32.4	6.5	7.0	7.4	7.7
-2.8	35.7	35.4	35.3	35.3	6.6	7.2	7.5	7.9
0.0	38.8	38.6	38.5	38.4	6.8	7.4	7.7	8.1
2.8	42.0	41.7	41.6	41.5	6.9	7.6	7.9	8.3
5.6	45.3	45.0	44.9	44.7	7.1	7.8	8.1	8.5
8.3	48.9	48.5	48.3	48.1	7.3	8.0	8.4	8.8
11.1	52.7	52.2	51.9	51.6	7.5	8.2	8.6	9.0
13.9	56.6	56.0	55.6	55.2	7.7	8.4	8.8	9.2
16.7	60.7	59.9	59.4	59.0	7.9	8.7	9.1	9.5
19.4	64.8	63.9	63.4	62.8	8.1	8.9	9.3	9.8
22.2	69.0	68.0	67.4	66.8	8.4	9.2	9.6	10.0

Correction Factors - Other Airflows*(Table Value)

Correction Factor = Value at new airflow
 Airflow 4500 cfm 5500 cfm
 7645 m³/h 9344 m³/h

Heating Capacity x 0.99 x 1.01
 Compressor kW x 1.02 x 0.98

Values at ARI Rating Conditions of:

70F(21.1C) and 47/43F(8.3/6.1C)(High Temp. Cond.)
 70F(21.1C) and 17/15F(-8.3/-9.4C)(Low Temp. Cond.)

Airflow = 5000 cfm (8495 m³/h)

Heating Capacity (High Temp.) = 166,000 (48.60)

Heating Capacity (Low Temp.) = 101,000 (29.57)

Compressor Power (High Temp) = 11.67 kW

Compressor Power (Low Temp) = 9.66 kW

Coeff. Of Perf. (High Temp) = 3.2

Coeff. Of Perf. (Low Temp) = 2.2

Outdoor Fan Power = 1100 watts

Indoor Fan Power = 2570 watts

Note:

1. Rated with 25 feet of 1-3/8" suction and 1/2" liquid line."



Performance Data (System)

Table PD-12 — Gross Heating Capacities (MBh)
TWA200B Heat Pump with TWE200B Air Handler At 6675 CFM (I-P)

Outdoor Temperature (°F)	Heating Capacity (BTUH/1000) At				Total Power in Kilowatts At			
	60	70	75	80	60	70	75	80
-18	42.4	79.1	84.7	87.4	11.5	15.4	16.6	17.6
-13	68.2	86.2	90.2	92.3	13.0	15.6	16.7	17.7
-8	81.5	93.8	96.7	98.0	13.6	15.9	16.9	17.9
-3	93.1	101.8	103.7	104.5	14.1	16.2	17.1	18.1
2	104.2	110.2	111.4	111.7	14.5	16.4	17.4	18.3
7	115.2	119.2	119.8	119.7	14.9	16.7	17.6	18.6
12	126.6	128.8	128.9	128.5	15.2	17.0	17.9	18.9
17	138.2	139.1	138.8	138.2	15.5	17.3	18.2	19.2
22	150.3	150.1	149.5	148.6	15.9	17.6	18.6	19.6
27	162.9	161.8	160.9	159.8	16.2	18.0	18.9	20.0
32	176.1	174.3	173.2	171.9	16.5	18.3	19.3	20.4
37	189.2	186.9	185.6	184.3	16.9	18.7	19.7	20.8
42	202.8	200.0	198.6	197.2	17.2	19.1	20.2	21.3
47	216.9	213.8	212.3	210.8	17.6	19.5	20.6	21.8
52	231.9	228.5	226.8	225.3	18.0	20.0	21.1	22.3
57	247.4	243.6	241.9	240.3	18.4	20.5	21.7	22.9
62	263.2	259.1	257.2	255.6	18.9	21.0	22.2	23.5
67	279.3	274.8	272.8	271.0	19.4	21.6	22.8	24.1
72	295.9	291.1	289.0	287.0	20.0	22.2	23.4	24.7

Table PD-12 — Gross Heating Capacities (kW)
TWA200B Heat Pump with TWE200B Air Handler At 11340 m³/h (SI)

Outdoor Temperature (°C)	Heating Capacity (kW) At				Total Power in Kilowatts At			
	15.6	21.1	23.9	26.7	15.6	21.1	23.9	26.7
-27.8	12.4	23.2	24.8	25.6	5.5	6.0	6.2	6.5
-25.0	20.0	25.3	26.4	27.0	5.6	6.1	6.3	6.6
-22.2	23.9	27.5	28.3	28.7	5.7	6.2	6.5	6.7
-19.4	27.2	29.8	30.4	30.6	5.8	6.3	6.6	6.9
-16.7	30.5	32.3	32.6	32.7	5.9	6.5	6.7	7.0
-13.9	33.7	34.9	35.1	35.1	6.0	6.6	6.9	7.2
-11.1	37.1	37.7	37.8	37.6	6.2	6.7	7.0	7.4
-8.3	40.5	40.7	40.7	40.5	6.3	6.9	7.2	7.5
-5.6	44.0	43.9	43.8	43.5	6.5	7.0	7.4	7.7
-2.8	47.7	47.4	47.1	46.8	6.6	7.2	7.5	7.9
0.0	51.6	51.0	50.7	50.3	6.8	7.4	7.7	8.1
2.8	55.4	54.7	54.3	54.0	6.9	7.6	7.9	8.3
5.6	59.4	58.6	58.1	57.7	7.1	7.8	8.1	8.5
8.3	63.5	62.6	62.2	61.7	7.3	8.0	8.4	8.8
11.1	67.9	66.9	66.4	66.0	7.5	8.2	8.6	9.0
13.9	72.4	71.3	70.8	70.3	7.7	8.4	8.8	9.2
16.7	77.1	75.9	75.3	74.8	7.9	8.7	9.1	9.5
19.4	81.8	80.5	79.9	79.4	8.1	8.9	9.3	9.8
22.2	86.6	85.2	84.6	84.0	8.4	9.2	9.6	10.0

Correction Factors - Other Airflows
 (Table Value x Correction Factor = Value at new airflow)

Airflow = 6700 cfm (11383 m³/h)

Heating Capacity (High Temp.) = 214,000 (62.66)

Heating Capacity (Low Temp.) = 139,000 (40.70)

Compressor Power (High Temp) = 15.83 kW

Compressor Power (Low Temp) = 13.50 kW

Coeff. Of Perf. (High Temp) = 3.2

Coeff. Of Perf. (Low Temp) = 2.3

Outdoor Fan Power = 1,200 watts

Indoor Fan Power = 2,300 watts

Note:

1. Rated with 25 feet of 1-3/8" suction and 1/2" liquid line."



Performance Data (Air Handler)

Table PD-13 — Evaporator Fan Performance — TWE050A (I-P)

CFM	External Static Pressure (Inches of Water Column)																					
	.10"	.20"	.30"	.40"	.50"	.60"	.70"	.80"	.90"	1.00"	1.10"	RPM	BHP									
1400	—	—	—	646	0.37	698	0.42	751	0.47	803	0.52	856	0.56	908	0.61	941	0.65	973	0.68	1006	0.71	
1500	—	—	607	0.36	661	0.40	713	0.45	764	0.50	816	0.54	867	0.59	919	0.64	952	0.67	984	0.71	—	—
1600	—	—	625	0.38	676	0.43	727	0.48	778	0.52	828	0.57	879	0.62	930	0.67	963	0.70	995	0.74	—	—
1700	601	0.35	648	0.40	696	0.44	744	0.49	792	0.54	841	0.59	889	0.64	937	0.69	971	0.73	1005	0.77	—	—
1800	625	0.36	671	0.41	716	0.46	762	0.51	807	0.56	853	0.61	898	0.66	944	0.71	979	0.76	—	—	—	—
1900	642	0.40	687	0.45	731	0.50	776	0.55	820	0.60	865	0.66	909	0.71	951	0.75	987	0.80	—	—	—	—
2000	659	0.44	703	0.49	745	0.54	790	0.60	833	0.65	877	0.70	920	0.75	957	0.80	994	0.84	—	—	—	—
2100	674	0.48	722	0.54	770	0.60	817	0.65	857	0.70	897	0.75	936	0.80	973	0.85	1009	0.89	—	—	—	—

0.75 HP Standard Motor and Standard Static Drive | **1.0 HP Oversized Motor and High Static Drive**

Notes:

1. Performance based on a wet coil and 1 inch (25.4 mm) throwaway filters.
2. Tabulated brake horsepower is the motor shaft output required.
3. Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.

Table PD-13 — Evaporator Fan Performance — TWE050A (SI)

m³/hr	External Static Pressure (Pascal)																					
	25	50	75	100	125	150	174	199	224	249	274	RPM	kW	RPM	kW	RPM	kW	RPM	kW			
2379	—	—	—	646	0.28	698	0.31	751	0.35	803	0.39	856	0.42	908	0.45	941	0.48	973	0.51	1006	0.53	
2549	—	—	607	0.27	661	0.30	713	0.34	764	0.37	816	0.40	867	0.44	919	0.48	952	0.50	984	0.53	—	—
2718	—	—	625	0.28	676	0.32	727	0.36	778	0.39	828	0.43	879	0.46	930	0.50	963	0.52	995	0.55	—	—
2888	601	0.26	648	0.30	696	0.33	744	0.37	792	0.40	841	0.44	889	0.48	937	0.51	971	0.54	1005	0.57	—	—
3058	625	0.27	671	0.31	716	0.34	762	0.38	807	0.42	853	0.45	898	0.49	944	0.53	979	0.57	—	—	—	—
3228	642	0.30	687	0.34	731	0.37	776	0.41	820	0.45	865	0.49	909	0.53	951	0.56	987	0.60	—	—	—	—
3398	659	0.33	703	0.37	745	0.40	790	0.45	833	0.48	877	0.52	920	0.56	957	0.60	994	0.63	—	—	—	—
3568	674	0.36	722	0.40	770	0.45	817	0.48	857	0.52	897	0.56	936	0.60	973	0.63	1009	0.66	—	—	—	—

0.56 kW Standard Motor and Standard Static Drive | **0.75 kW Oversized Motor and High Static Drive**

Notes:

1. Performance based on a wet coil and 1 inch (25.4 mm) throwaway filters.
2. Tabulated brake horsepower is the motor shaft output required.
3. Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.

Table PD-14 — Blower Speeds — TWE050A

Drive	Motor Drive Turns Open						
	6	5	4	3	2	1	0
Standard	N/A	590	639	688	737	786	835
High Static	N/A	713	772	832	891	951	1009

Performance Data

(Air Handler)

Table PD-15 – Evaporator Fan Performance TWE075A (I-P)

CFM	External Static Pressure (In. Of Water Column)											
	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
2000	—	—	443	0.44	489	0.49	535	0.54	581	0.59	627	0.64
2125	—	—	453	0.46	499	0.52	546	0.57	592	0.63	638	0.68
2250	—	—	463	0.49	510	0.55	556	0.61	602	0.67	649	0.73
2375	—	—	473	0.51	520	0.57	567	0.64	613	0.70	660	0.77
2500	445	0.47	489	0.54	533	0.60	578	0.67	622	0.73	667	0.80
2625	464	0.50	506	0.57	548	0.63	589	0.69	631	0.76	672	0.82
2750	484	0.53	523	0.59	562	0.66	601	0.72	640	0.78	678	0.84
2875	504	0.56	540	0.62	576	0.68	612	0.74	648	0.81	684	0.87
3000	524	0.59	557	0.65	590	0.71	624	0.77	657	0.83	690	0.89
1.0 HP Standard Motor and Low Static Drive												
1.0 HP Standard Motor and Drive												
1.5 HP Oversized Motor and High Static Drive												

Notes:

1. Performance based on a wet coil and 1 inch (25.4 mm) throwaway filters.
2. Tabulated brake horsepower is the motor shaft output required.
3. Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.

Table PD-15 – Continued

CFM	External Static Pressure (In. Of Water Column)												
	1.20	1.30	1.40	1.50	1.60	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2000	844	0.96	871	1.02	897	1.09	924	1.15	950	1.21	—	—	—
2125	852	1.03	879	1.09	906	1.16	933	1.22	—	—	—	—	—
2250	859	1.10	886	1.17	914	1.23	942	1.30	—	—	—	—	—
2375	866	1.17	894	1.24	922	1.30	950	1.37	—	—	—	—	—
2500	870	1.21	899	1.29	928	1.36	—	—	—	—	—	—	—
2625	874	1.25	903	1.33	932	1.42	—	—	—	—	—	—	—
2750	877	1.29	907	1.38	937	1.47	—	—	—	—	—	—	—
2875	880	1.33	911	1.43	942	1.52	—	—	—	—	—	—	—
3000	884	1.37	915	1.48	946	1.58	—	—	—	—	—	—	—
1.5 HP Oversized Motor and High Static Drive													
1.0 HP Standard Motor and Drive													

Table PD-15 – Evaporator Fan Performance TWE075A (SI)

m³/hr	External Static Pressure (Pascal)													
	25	50	75	100	125	150	174	199	224	249	274	RPM	kW	
RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	RPM	RPM	kW	
3338	—	—	443	0.33	489	0.37	535	0.4	581	0.44	627	0.48	673	0.51
3547	—	—	453	0.34	499	0.39	546	0.43	592	0.47	638	0.51	684	0.55
3755	—	—	463	0.37	510	0.41	556	0.45	602	0.5	649	0.54	695	0.59
3964	—	—	473	0.38	520	0.43	567	0.48	613	0.52	660	0.57	706	0.62
4173	445	0.35	489	0.4	533	0.45	578	0.5	622	0.54	667	0.6	711	0.64
4381	464	0.37	506	0.43	548	0.47	589	0.51	631	0.57	672	0.61	714	0.66
4590	484	0.4	523	0.44	562	0.49	601	0.54	640	0.58	678	0.63	717	0.68
4798	504	0.42	540	0.46	576	0.51	612	0.55	648	0.6	684	0.65	720	0.69
5007	524	0.44	557	0.48	590	0.53	624	0.57	657	0.62	690	0.66	723	0.71
.75 kW Standard Motor and Low Static Drive														
.75 kW Standard Motor and Drive														
1.12 kW Oversized Motor and High Static Drive														

Notes:

1. Performance based on a wet coil and 1 inch (25.4 mm) throwaway filters.
2. Tabulated brake horsepower is the motor shaft output required.
3. Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.

Table PD-15 – Continued

m³/hr	External Static Pressure (Pascal)												
	299	324	349	374	398	RPM	kW	RPM	kW	RPM	kW	RPM	kW
RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	RPM	RPM	kW
3338	844	0.72	871	0.76	897	0.81	924	0.86	950	0.9	—	—	—
3547	852	0.77	879	0.81	906	0.87	933	0.91	—	—	—	—	—
3755	859	0.82	886	0.87	914	0.92	942	0.97	—	—	—	—	—
3964	866	0.87	894	0.92	922	0.97	950	1.02	—	—	—	—	—
4173	870	0.9	899	0.96	928	1.01	—	—	—	—	—	—	—
4381	874	0.93	903	0.99	932	1.06	—	—	—	—	—	—	—
4590	877	0.96	907	1.03	937	1.1	—	—	—	—	—	—	—
4798	880	0.99	911	1.07	942	1.13	—	—	—	—	—	—	—
5007	884	1.02	915	1.1	946	1.18	—	—	—	—	—	—	—
1.12 kW Oversized Motor and High Static Drive													
.75 kW Standard Motor and Drive													

Table PD-16 – Blower Speeds – TWE075A

Drive	6	5	4	3	2	1	0	
	Standard	N/A	600	650	700	750	800	850
Low Static	N/A	428	464	499	535	571	606	
High Static	N/A	700	750	800	850	900	950	



Performance Data

(Air Handler)

Table PD-17 — Evaporator Fan Performance TWE100A, TWE100B (I-P)

CFM	External Static Pressure (In. Of Water Column)											
	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.20	
1.5 HP Standard Motor and Low Static Drive												
2600	460	0.32	493	0.39	527	0.47	565	0.55	603	0.63	641	0.71
2775	473	0.37	506	0.45	540	0.53	576	0.61	613	0.69	649	0.77
2950	487	0.43	519	0.50	552	0.58	587	0.67	623	0.75	658	0.83
3125	501	0.49	532	0.56	565	0.64	599	0.72	632	0.81	666	0.89
3300	520	0.58	548	0.65	581	0.73	613	0.81	644	0.89	677	0.98
3475	541	0.69	568	0.76	600	0.84	631	0.93	658	1.00	691	1.08
3650	562	0.82	588	0.88	618	0.97	648	1.05	671	1.11	703	1.19
3825	582	0.96	608	1.03	637	1.11	666	1.20	685	1.26	711	1.31
4000	602	1.11	628	1.17	656	1.26	683	1.35	698	1.40	720	1.43
1.5 HP Standard Motor and Drive												
2.0 HP Oversized Motor and High Static Drive												

Notes:

1. Performance based on a wet coil and 1 inch (25.4 mm) throwaway filters.
2. Tabulated brake horsepower is the motor shaft output required.
3. Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.
4. Low Static Drive must be field supplied.

Table PD-17—Continued

CFM	External Static Pressure (In. Of Water Column)			
	1.40	1.60	RPM	BHP
2.0 HP Oversized Motor and High Static Drive				
2600	881	1.30	936	1.45
2775	884	1.36	938	1.51
2950	886	1.41	939	1.57
3125	889	1.47	941	1.64
3300	892	1.54	945	1.73
3475	897	1.63	950	1.85
3650	902	1.73	955	1.99
3825	912	1.89	960	2.18
4000	922	2.04	965	2.30

Table PD-17—Evaporator Fan Performance TWE100A, TWE100B (SI)

m³/hr	External Static Pressure (Pascal)											
	25	50	75	100	125	150	174	199	224	249	299	RPM
1.12 kW Standard Motor and Low Static Drive												
4417	460	0.24	493	0.29	527	0.35	565	0.41	603	0.47	641	0.53
4715	473	0.28	506	0.34	540	0.4	576	0.45	613	0.51	649	0.57
5012	487	0.32	519	0.37	552	0.43	587	0.5	623	0.56	658	0.62
5309	501	0.37	532	0.42	565	0.48	599	0.54	632	0.6	666	0.66
5607	520	0.43	548	0.48	581	0.54	613	0.6	644	0.66	677	0.73
5904	541	0.51	568	0.57	600	0.63	631	0.69	658	0.75	691	0.8
6201	562	0.61	588	0.66	618	0.72	648	0.78	671	0.83	703	0.89
6499	582	0.72	608	0.77	637	0.83	666	0.89	685	0.94	711	0.98
6796	602	0.83	628	0.87	656	0.94	683	1.01	698	1.04	720	1.07
1.12 kW Standard Motor and Drive												
1.49 kW Oversized Motor and High Static Drive												

Notes:

1. Performance based on a wet coil and 1 inch (25.4 mm) throwaway filters.
2. Tabulated brake horsepower is the motor shaft output required.
3. Factory setting of motor sheave is 3.0 turns open. Adjustments are made in 0.5 turn increments.
4. Low Static Drive must be field supplied.

Table PD-17—Continued

m³/hr	External Static Pressure (Pascal)			
	349	398	RPM	kW
1.49 kW Oversized Motor and High Static Drive				
4417	881	0.97	936	1.08
4715	884	1.01	938	1.13
5012	886	1.05	939	1.17
5309	889	1.1	941	1.22
5607	892	1.15	945	1.29
5904	897	1.22	950	1.38
6201	902	1.29	955	1.48
6499	912	1.41	960	1.63
6796	922	1.52	965	1.72

Table PD-18—Blower Speeds — TWE100A, TWE100B

Drive	Motor Sheave Turns Open						
	6	5	4	3	2	1	0
Standard	N/A	587	629	671	713	755	796
Low Static	N/A	453	485	518	550	583	615
High Static	N/A	606	641	677	713	748	784
High Static II	N/A	745	789	833	877	920	965



Performance Data (Air Handler)

Table PD-19 — Evaporator Fan Performance — TWE155B (I-P)

CFM	External Static Pressure (Inches of Water Column)																3.0 HP Oversized Motor and High Static Drive									
	.10"	.20"	.30"	.40"	.50"	.60"	.70"	.80"	.90"	1.00"	1.20"	1.40"	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
2.0 HP Standard Motor and Drive																										
4000	628	1.34	653	1.38	678	1.43	692	1.48	708	1.52	723	1.57	738	1.60	749	1.61	759	1.62	795	1.66	851	1.85	907	2.03		
4250	633	1.37	658	1.41	683	1.46	697	1.51	713	1.55	728	1.60	743	1.62	751	1.63	770	1.64	806	1.71	862	1.90	918	2.11		
4500	637	1.40	662	1.44	687	1.49	701	1.53	717	1.58	732	1.63	747	1.64	754	1.65	782	1.67	817	1.76	873	1.96	929	2.19		
4750	641	1.42	666	1.50	691	1.53	705	1.61	721	1.63	736	1.65	751	1.66	765	1.67	793	1.72	828	1.81	884	2.01	940	2.27		
5000	645	1.44	670	1.52	695	1.56	710	1.65	725	1.67	739	1.68	758	1.70	777	1.74	806	1.81	839	1.91	896	2.13	—	—		
5260	650	1.46	675	1.53	700	1.59	716	1.67	728	1.70	741	1.73	765	1.75	790	1.82	819	1.92	849	2.03	907	2.28	—	—		
5500	652	1.47	678	1.55	703	1.63	721	1.71	734	1.75	747	1.78	775	1.83	804	1.92	832	2.03	861	2.15	920	2.44	—	—		
5750	653	1.48	680	1.57	706	1.68	726	1.76	743	1.81	761	1.86	789	1.94	817	2.04	846	2.16	875	2.29	935	2.61	—	—		
6000	655	1.49	681	1.59	709	1.74	731	1.80	752	1.87	774	1.94	803	2.05	831	2.17	860	2.29	889	2.44	950	2.78	—	—		

Notes:

1. Performance based on a wet coil and 2 inch (51 mm) throwaway filters.
2. Tabulated brake horsepower is the motor shaft output required.
3. Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.

Table PD-19 — Evaporator Fan Performance TWE155B (SI)

m³/hr	External Static Pressure (Pascal)																2.24 kW Oversized Motor and High Static Drive									
	25	50	75	100	125	150	174	199	224	249	299	349	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	
1.49 kW Standard Motor and Drive																										
6796	628	1	653	1.03	678	1.07	692	1.1	708	1.13	723	1.17	738	1.19	749	1.2	759	1.21	795	1.24	851	1.38	907	1.51		
7221	633	1.02	658	1.05	683	1.09	697	1.13	713	1.16	728	1.19	743	1.21	751	1.22	770	1.22	806	1.28	862	1.42	918	1.57		
7646	637	1.04	662	1.07	687	1.11	701	1.14	717	1.18	732	1.22	747	1.23	754	1.23	782	1.25	817	1.31	873	1.46	929	1.63		
8070	641	1.06	666	1.12	691	1.14	705	1.2	721	1.22	736	1.23	751	1.24	765	1.25	793	1.28	828	1.35	884	1.5	940	1.69		
8495	645	1.07	670	1.13	695	1.16	710	1.23	725	1.25	739	1.25	758	1.27	777	1.3	806	1.35	839	1.42	896	1.59	—	—		
8937	650	1.09	675	1.14	700	1.19	716	1.25	728	1.27	741	1.29	765	1.3	790	1.36	819	1.43	849	1.51	907	1.7	—	—		
9345	652	1.1	678	1.16	703	1.22	721	1.28	734	1.3	747	1.33	775	1.36	804	1.43	832	1.51	861	1.6	920	1.82	—	—		
9769	653	1.1	680	1.17	706	1.25	726	1.31	743	1.3	761	1.39	789	1.45	817	1.52	846	1.61	875	1.71	935	1.95	—	—		
10194	655	1.11	681	1.19	709	1.3	731	1.34	752	1.35	774	1.45	803	1.53	831	1.62	860	1.71	889	1.82	950	2.07	—	—		

Notes:

1. Performance based on a wet coil and 2 inch (51 mm) throwaway filters.
2. Tabulated brake horsepower is the motor shaft output required.
3. Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.

Table PD-20— Blower Speeds — TWE155B

Drive	Motor Sheave Turns Open							
	6	5	4	3	2	1	0	
Standard	619	648	677	705	734	763	N/A	
High Static	777	806	835	863	892	921	950	



Performance Data (Air Handler)

Table PD-21— Evaporator Fan Performance TWE200B (I-P)

CFM	External Static Pressure (In. Of Water Column)												External Static Pressure (In. Of Water Column)											
	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.20	140	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.20	140
RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
5200	—	—	461	0.74	503	0.91	545	1.07	587	1.03	619	1.17	685	1.40	723	1.59	750	1.74	777	1.89	851	2.19	898	2.39
5525	—	—	479	0.88	521	1.04	563	1.21	605	1.21	640	1.35	701	1.58	739	1.77	766	1.92	793	2.07	859	2.37	906	2.60
5850	—	—	497	1.01	539	1.18	581	1.34	623	1.39	661	1.53	717	1.76	755	1.95	782	2.10	809	2.25	868	2.55	915	2.81
6175	473	0.99	515	1.15	557	1.31	599	1.48	641	1.57	682	1.71	732	1.94	769	2.12	796	2.27	823	2.43	877	2.73	924	3.02
6500	492	1.12	534	1.28	576	1.45	618	1.61	660	1.75	702	1.90	748	2.12	784	2.30	811	2.45	838	2.60	886	2.91	933	3.22
6825	510	1.25	552	1.42	594	1.59	636	1.75	678	1.91	723	2.10	763	2.30	794	2.47	820	2.62	846	2.77	894	3.09	941	3.42
7150	528	1.38	570	1.56	612	1.73	654	1.90	697	2.07	744	2.30	779	2.49	804	2.64	830	2.78	855	2.94	903	3.26	950	3.62
7475	550	1.61	594	1.77	640	1.92	683	2.08	721	2.29	760	2.50	790	2.67	815	2.81	840	2.96	865	3.11	914	3.47	959	3.85
7800	572	1.83	618	1.97	668	2.10	712	2.27	746	2.52	776	2.69	802	2.84	826	2.99	851	3.13	876	3.27	926	3.67	969	4.08
3.0 HP Standard Motor and Low Static Drive			3 HP Standard Motor and Low Static Drive System II			3 HP Standard Motor and Standard Drive System			5 HP Oversized Motor and High Static Drive System															

Notes:

1. Performance based on a wet coil and 2 inch (51 mm) throwaway filters.
2. Tabulated brake horsepower is the motor shaft output required.
3. Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.
4. Low static drive components referencing this note are field supplied.

Table PD-21— Continued

External Static Pressure (In. Of Water Column)

CFM	1.60				1.80			
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5 HP Oversized Motor and High Static Drive System								
5200	944	2.75	989	3.12	—	—	—	—
5525	952	2.96	997	3.33	—	—	—	—
5850	961	3.17	1006	3.54	—	—	—	—
5175	970	3.38	1015	3.75	—	—	—	—
8500	978	3.59	1023	3.96	—	—	—	—
8825	986	3.80	—	—	—	—	—	—
7150	994	4.01	—	—	—	—	—	—
7475	1003	4.25	—	—	—	—	—	—
7800	1012	4.50	—	—	—	—	—	—

Table PD-21— Evaporator Fan Performance TWE200B (SI)

m³/hr	External Static Pressure (Pascal)												External Static Pressure (Pascal)											
	25	50	75	100	125	150	174	199	224	249	299	349	25	50	75	100	125	150	174	199	224	249	299	349
RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW
8835	—	—	461	0.55	503	0.68	545	0.8	587	0.77	619	0.87	685	1.04	723	1.19	750	1.3	777	1.41	851	1.63	898	1.78
9387	—	—	479	0.66	521	0.78	563	0.9	605	0.9	640	1.01	701	1.18	739	1.32	766	1.43	793	1.54	859	1.77	906	1.94
9939	—	—	497	0.75	539	0.88	581	1	623	1.04	661	1.14	717	1.31	755	1.45	782	1.57	809	1.68	868	1.9	915	2.1
10491	473	0.74	515	0.86	557	0.98	599	1.1	641	1.17	682	1.28	732	1.45	769	1.58	796	1.69	823	1.81	877	2.04	924	2.52
11044	492	0.84	534	0.95	576	1.08	618	1.2	660	1.3	702	1.42	748	1.58	784	1.72	811	1.83	838	1.94	886	2.17	933	2.4
11596	510	0.93	552	1.06	594	1.19	636	1.3	678	1.42	723	1.57	763	1.72	794	1.84	820	1.95	846	2.07	894	2.3	941	2.55
12148	528	1.03	570	1.16	612	1.29	654	1.42	697	1.54	744	1.72	779	1.86	804	1.97	830	2.07	855	2.19	903	2.43	950	2.7
12700	550	1.2	594	1.32	640	1.43	683	1.55	721	1.71	760	1.87	790	1.99	815	2.1	840	2.21	865	2.32	914	2.59	959	2.87
13252	572	1.36	618	1.47	668	1.57	712	1.69	746	1.88	776	2.01	802	2.12	826	2.23	851	2.33	876	2.44	926	2.74	969	3.04
2.24 kW Standard Motor and Low Static Drive System			2.24 kW Standard Motor and Low Static Drive System II			2.24 kW Standard Motor and Standard Drive System			3.73 kW Oversized Motor and High Static Drive System															

Notes:

1. Performance based on a wet coil and 2 inch (51 mm) throwaway filters.
2. Tabulated brake horsepower is the motor shaft output required.
3. Factory setting of motor sheave is 1.5 turns open. Adjustments are made in 0.5 turn increments.
4. Low static drive components referencing this note are field supplied.

Table PD-21— Continued

External Static Pressure (Pascal)

m³/hr	398				448			
	RPM	kW	RPM	kW	RPM	kW	RPM	kW
3.73 kW Oversized Motor and High Static Drive System								
8835	944	2.05	989	2.33	—	—	—	—
9387	952	2.21	997	2.48	—	—	—	—
9939	961	2.36	1006	2.64	—	—	—	—
10491	970	2.52	1015	2.8	—	—	—	—
11044	978	2.68	1023	2.95	—	—	—	—
11596	986	2.83	—	—	—	—	—	—
12148	994	2.99	—	—	—	—	—	—
12700	1003	3.17	—	—	—	—	—	—
13252	1012	3.36	—	—	—	—	—	—

Table PD-22 — Blower Speeds — TWE200B

Drive	Motor Sheave Turns Open						
	6	5	4	3	2	1	0
Standard	706	732	758	784	811	837	863
Low Static I	457	478	500	521	542	563	585
Low Static II	574	595	617	638	659	680	702
High Static	N/A	821	862	903	945	986	1027

Performance Data

Table PD-23— Discharge Plenum And Grille Assembly Throw Distance — Air Handler — ft (m)

Unit	Model No.	CFM	m³/h	Louver Angle Deflection Position			
				Straight	20	40	55
TWE050	1400	2378	38 (11.6)	24 (7.3)	22 (6.7)	18 (5.5)	
	1600	2718	42 (12.8)	31 (9.4)	26 (7.9)	20 (6.1)	
	1800	3058	46 (14.0)	37 (11.3)	29 (8.8)	22 (6.7)	
	2000	3398	48 (14.6)	43 (13.1)	33 (10.1)	24 (7.3)	
	2200	3737	51 (15.5)	50 (15.2)	36 (11.0)	25 (7.6)	
	2100	3568	49 (14.9)	38 (11.6)	31 (9.4)	27 (8.2)	
TWE075	2400	4077	52 (15.9)	43 (13.1)	35 (10.7)	29 (8.8)	
	2700	4587	55 (16.8)	48 (14.6)	38 (11.6)	31 (9.4)	
	3000	5097	58 (17.7)	53 (16.2)	42 (12.8)	32 (9.8)	
	3200	5436	56 (17.1)	46 (14.0)	38 (11.6)	30 (9.1)	
	3600	6116	62 (18.9)	51 (15.5)	42 (12.8)	33 (10.1)	
	4000	6795	66 (20.1)	57 (17.4)	47 (14.3)	35 (10.7)	
TWE100	4400	7475	71 (21.6)	62 (18.9)	52 (15.9)	38 (11.6)	
	4800	8154	76 (23.2)	67 (20.4)	56 (17.1)	42 (12.8)	
	4300	7305	42 (12.8)	32 (9.8)	29 (8.8)	21 (6.4)	
	4900	8324	47 (14.3)	38 (11.6)	32 (9.8)	25 (7.6)	
	5400	9174	52 (15.9)	44 (13.4)	37 (11.3)	29 (8.8)	
TWE155	5600	9514	50 (15.2)	40 (12.2)	33 (10.1)	27 (8.2)	
	6000	10193	57 (17.4)	49 (14.9)	41 (12.5)	32 (9.8)	
	6400	10873	56 (17.1)	46 (14.0)	38 (11.6)	30 (9.1)	
	7200	12232	62 (18.9)	51 (15.5)	42 (12.8)	33 (10.1)	
TWE200	8000	13591	66 (20.1)	57 (17.4)	47 (14.3)	35 (10.7)	

Throw distance values are based on a terminal velocity of 75 FPM (0.38 m/s).

Throw distance values at other terminal velocities may be established by multiplying throw distances in table above by throw factor:

Terminal Velocity	Throw Factor
50 fpm (.25 m/s)	x 1.50
100 fpm (.51 m/s)	x .75
150 fpm (.76 m/s)	x .50

Table PD-24— Static Pressure Drop Through Accessories (Inches Of Water Column)¹ — Air Handler

Unit	Model No.	CFM	m³/h	Discharge			Electric Heaters (kW)			
				Return Grille	Plenum and Grille ²	5-10	15-20	25-30	35-50	
				In. wc ¹	Pascal	In. wc ¹	Pascal		In. wc (Pascal)	
TWE050A	1400	2380	.09	(22.4)	.16	(39.8)	.06 (15.0)	.06 (15.0)	.12 (29.9)	—
	1600	2718	.12	(29.9)	.21	(52.3)	.08 (19.9)	.08 (19.9)	.14 (34.9)	—
	2000	3398	.18	(44.8)	.33	(82.2)	.13 (32.4)	.13 (32.4)	.19 (47.3)	—
TWE075A	2100	3568	.05	(12.5)	.19	(47.3)	.02 (5.0)	.03 (7.5)	.05 (12.5)	.08 (19.9)
	2400	4079	.08	(19.9)	.27	(67.2)	.03 (7.5)	.06 (15.0)	.08 (19.9)	.12 (29.9)
	3000	5098	.13	(32.4)	.40	(99.6)	.06 (15.0)	.12 (29.9)	.17 (42.4)	.23 (57.3)
TWE100A	2800	4756	.04	(10.0)	.34	(84.7)	.03 (7.5)	.04 (10.0)	.14 (34.9)	.20 (49.8)
TWE100B	3200	5436	.07	(17.4)	.43	(107.1)	.06 (15.0)	.13 (32.4)	.19 (47.3)	.26 (64.8)
TWE155B	4300	7304	.07	(17.4)	.18	(44.8)	.02 (5.0)	.02 (5.0)	.04 (10.0)	.05 (12.5)
	4800	8154	.09	(22.4)	.23	(57.3)	.03 (7.5)	.03 (7.5)	.06 (15.0)	.08 (19.9)
	6000	10195	.15	(37.4)	.34	(84.7)	.06 (15.0)	.06 (15.0)	.12 (29.9)	.17 (42.4)
TWE200B	5600	9515	.07	(17.4)	.32	(79.7)	.04 (10.0)	.04 (10.0)	.10 (25.0)	.15 (37.4)
	6400	10872	.11	(27.4)	.43	(107.1)	.06 (15.0)	.06 (15.0)	.13 (32.4)	.19 (47.3)
	8000	13594	.17	(42.3)	.66	(164.3)	.10 (25.0)	.10 (25.0)	.20 (49.8)	.30 (74.7)

1. Return air filter ESP included in Fan Performance Table data.

2. At louver opening angle of 42°F (5.5°C). For ESP at other angle openings, see accessory Installer's Guide.



Performance Data

Table PD-25 — Auxiliary Electric Heat Capacity — Air Handler

Unit Model No.	Total kW	No. of Stages	Stage 1				Stage 2				Total	
			kW Input	Btu Output	kW Input	Btu Output	kW Input	Btu Output	kW Input	Btu Output	kW Output	kW Output
TWE050, 075,100	3.47	1	3.47	11,851	3.47	—	—	—	—	—	11,851	3.47
	6.92	1	9.92	23,606	6.92	—	—	—	—	—	23,606	6.92
	10.39	1	10.39	35,457	10.39	—	—	—	—	—	35,457	10.39
	17.31	2	10.39	35,457	10.39	6.92	23,606	6.92	23,606	6.92	59,063	17.31
TWE075, 100A, 100	24.22	2	13.83	47,213	13.83	10.39	35,457	10.39	35,457	10.39	82,670	24.22
TWE155, 200	6.94	1	6.94	23,701	6.94	—	—	—	—	—	23,701	6.94
	13.83	1	13.83	47,213	13.83	—	—	—	—	—	47,213	13.83
	20.78	2	13.83	47,213	13.83	6.94	23,701	6.94	23,701	6.94	70,915	20.78
	34.62	2	20.78	70,915	20.78	13.84	47,213	13.84	47,213	13.84	118,128	34.61

*Heaters are rated at 400v. For other than rated voltage,

$$\text{Capacity} = \left(\frac{\text{Voltage}}{\text{Rated Voltage}} \right)^2 \times \text{Rated Capacity and kW} = \left(\frac{\text{Voltage}}{\text{Rated Voltage}} \right)^2 \times \text{Rated kW.}$$



Electrical Data

Table ED-1— Electrical Characteristics — Motors — Air Handler

Unit	Model No.	Standard Fan Motor				Oversized Fan Motor		
		Volts	Phase	FLA	LRA	Phase	FLA	LRA
	TWE050	380/415	3	1.4	8.2	3	1.8	21.6
	TWE075	380/415	3	3.2	19.7	3	4.0	25.5
	TWE100	380/415	3	3.6	25.5	3	5.3	37.5
	TWE155	380/415	3	4.6	37.5	3	6.9	39.2
	TWE200	380/415	3	7.6	39.2	3	9.0	65.1

Table ED-2 — Unit Wiring — Air Handler

Unit	Model No.	Unit Operating Voltage Range	Minimum Circuit Ampacity		Maximum Fuse Size or Maximum Circuit Breaker	
			Volts	Phase	Volts	Phase
	TWE050	380/415	2		15	
	TWE075	380/415	4		15	
	TWE100	380/415	5		15	
	TWE155	380/415	6		15	
	TWE200	380/415	10		15	

Table ED-3— Electrical Characteristics — Motors — 50 Cycle — Heat Pumps

Unit	Model No.	Compressor Motor				Condenser Fan Motor					
		No.	Volts	Phase	Amps		No.	Volts	Phase	Amps	
					RLA	LRA				(Ea.)	(Ea.)
	TWA075AD	1	380/415	3	8.8	90.0	1	380/415	1	1.6	3.7
	TWA100AD	1	380/415	3	15.8	124.0	1	380/415	1	2.7	70
	TWA155BD	2	380/415	3	11.2	94.8	2	380/415	1	1.6	3.7
	TWA200BD	2	380/415	3	15.8	124.0	2	380/415	1	2.7	70

Table ED-4 — Unit Wiring — Heat Pumps

Unit	Model No.	Unit Operating Voltage Range	Minimum Circuit Ampacity		Maximum Fuse Size or Maximum Circuit Breaker	
			Volts	Phase	Volts	Phase
	TWA075	380/415	12.6		50	
	TWA100	380/415	22.5		35	
	TWA155	380/415	28.4		35	
	TWA200	380/415	41.0		50	



Electrical Data

Table ED-5— Unit Wiring With Electric Heat (Single Point Connection) — Air Handlers

Heater Model No.	Heater kW Rating ¹	To Use with Unit	Control Stages	Minimum Circuit Ampacity ²	Maximum Fuse Breaker Size ²
BAYHTRL405A	3.47		1	9	15
BAYHTRL410A	6.92	TWE050AD	1	17	20
BAYHTRL415A	10.39		1	24	25
BAYHTRL425A	17.31		2	39	40
BAYHTRL405A	3.47		1	11	15
BAYHTRL410A	6.92		1	18	20
BAYHTRL415A	10.39	TWE075AD	1	26	30
BAYHTRL425A	17.31		2	41	45
BAYHTRL435A	24.22		2	56	60
BAYHTRL405A	3.47		1	12	15
BAYHTRL410A	6.92		1	19	25
BAYHTRL415A	10.39	TWE100AD, TWE100BD	1	27	30
BAYHTRL425A	20.78		2	42	45
BAYHTRL435A	24.22		2	57	60
BAYHTRM410A	6.94		1	21	30
BAYHTRM420A	13.83	TWE155BD	1	36	40
BAYHTRM430A	20.78		2	51	60
BAYHTRM450A	34.62		2	81	90
BAYHTRM410A	6.94		1	25	40
BAYHTRM420A	13.83	TWE200BD	1	40	50
BAYHTRM430A	20.78		2	55	60
BAYHTRM450A	34.62		2	85	90

1. kW ratings are at 400v for 3 phase, 400v air handlers

For other than rated voltage, ampacity = $\left(\frac{\text{Voltage}}{\text{Rated Voltage}}\right)^2 \times \text{Rated Capacity and kW} = \left(\frac{\text{Voltage}}{\text{Rated Voltage}}\right)^2 \text{ Rated kW.}$

2. Any power supply and circuits must be wired and protected in accordance with local codes.

3. Field wire must be rated at least 75°C.

4. Field wire must be rated at least 90°C.

Jobsite Connections

Wiring shown with dashed lines is to be furnished and installed by the customer. All customer-supplied wiring must be copper only and must conform to NEC and local electrical codes. Codes may require line of sight between disconnect switch and unit.

NOTE:

1. When electric heater accessory is used single point power entry or dual point power entry is field optional. Single point power entry option is through electric heater only.

TWA050/TWE050

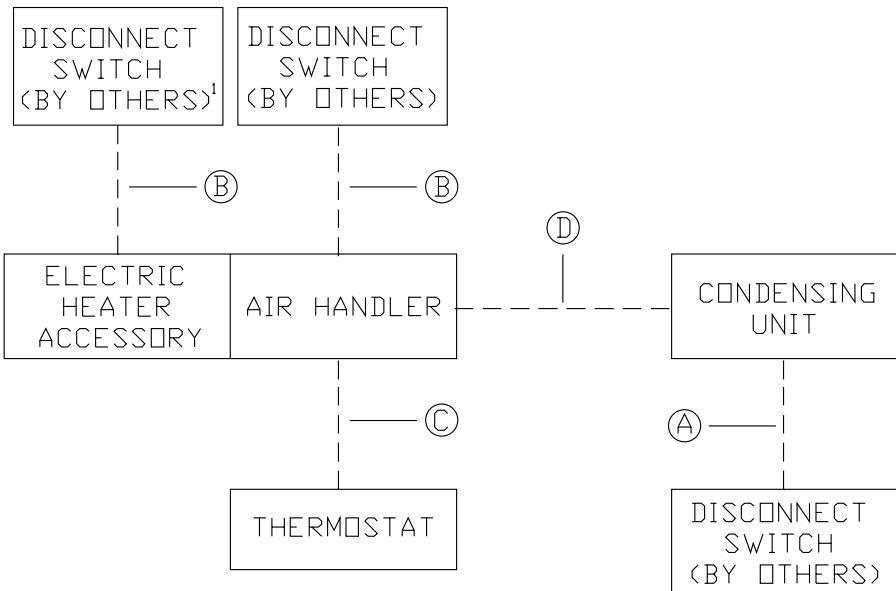
Field Wiring:

- A — 3 power wires. Line voltage.
- B — 3 power wires. Line voltage.
- C — Heat pump thermostat: 6 wires, 24 volts.
 - Electric heat: add 2 additional wires, 24 volts.
- D — 2 wires, 24 volts.
 - Outdoor thermostat: add 1 additional wire per ODT, 24 volts.
 - Electric heat: add 1 additional wire, 24 volts.

(2) TWA050/TWE100B

Field Wiring:

- A — 3 power wires. Line voltage.
- B — 3 power wires. Line voltage.
- C — Heat pump thermostat: 7 wires, 24 volts Electric Heat: add 2 additional wires, 24 volts.
- D — 5 wires, 24 volts to outdoor section "A" 2 wires, 24 volts to outdoor section "B" 2 wires, 24 volts between outdoor sections "A" "B"
 - Electric heat: add 1 additional wire, 24 volts.
 - Outdoor thermostat: add 1 additional wire, 24 volt.



TWA075A/TWE075A;

TWA100A/TWE100A

Field Wiring:

- A — 3 power wires, line voltage.
- B — 3 power wires, line voltage.
- C — Heat pump thermostat: 6 wires, 24 volts.
 - Electric heat: add 2 additional wires, 24 volts.
- D — 6 wires, 24 volts.
 - Outdoor thermostat: add 1 additional wire, 24 volts.
 - Electric heat: add 1 additional wire, 24 volts.

(2) TWA075A/TWE155B;

(2) TWA100A/TWE200B

Field Wiring:

- A — 3 power wires, line voltage.
- B — 3 power wires, line voltage.
- C — Heat pump thermostat: 7 wires, 24 volts.
 - Electric heat: add 2 additional wires, 24 volts.

- D — 9 wires, 24 volts.
 - Electric heat: add 4 additional wires, 24 volts.
 - Outdoor thermostat: add 3 additional wires, 24 volts.

TWA155B/TWE155B;

TWA200B/TWE200B

Field Wiring:

- A — 3 power wires, line voltage.
- B — 3 power wires, line voltage.
- C — Heat pump thermostat: 7 wires, 24 volts.
 - Electric heat: add 2 additional wires, 24 volts.
- D — 7 wires, 24 volts.
 - Electric heat: add 4 additional wires, 24 volts.
 - Outdoor thermostat: add 1 additional wire, 24 volts.

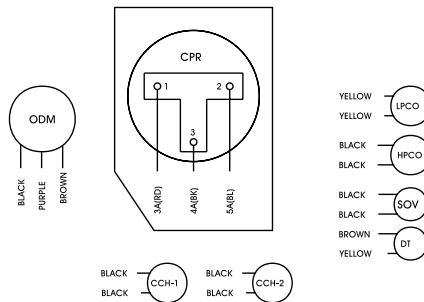
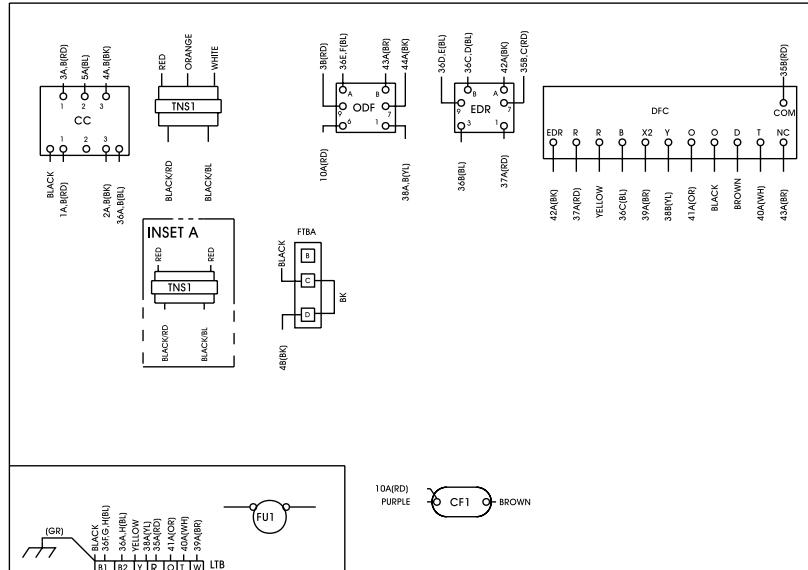


TRANE®

Typical Wiring (Heat Pump)

Heat Pump — Single Compressor

Typical unit wiring diagram. For specific wiring, see individual Service Facts.



NOTES:

1. LOW VOLTAGE WIRING MUST BE 18 AWG MIN.
2. MAX. EXTERNAL LOW VOLTAGE LOAD: 1.4 AMPS 24 V.A.C. DOES NOT INCLUDE ACCESSORIES BUT DOES INCLUDE INDOOR BLOWER RELAY.
3. SEE WIRING DIAGRAM WITH HEATER FOR DETAILS OF HEATER WIRING.
4. CONNECTIONS SHOWN ARE FOR 230V/60HZ/3PH, WHEN 208V/60HZ/3PH OPERATION IS REQUIRED:

 - [a] TRANSFORMER REMOVE 1/4" (6.35MM) RED WIRE FROM RED WIRE AND CONNECT TO ORANGE WIRE. THE RED WIRE MUST BE RE-TERMINATED TO AVOID ACCIDENTALLY SHORTING.

5. IF EVAPORATOR DEFROST CONTROL (ECD) IS USED, REMOVE JUMPER CONNECTION.
6. CONNECTIONS FOR THE 208V/3PH/40HZ UNIT ARE SHOWN. FOR 400V, 440V, AND 575V UNITS SEE TRANSFORMER CONNECTIONS IN INSET A AND B.

NOTE
THREE PHASE MOTOR (S) FACTORY
SUPPLIED IN THIS EQUIPMENT,
PROTECTED UNDER PRIMARY
SINGLE-PHASING CONDITIONS

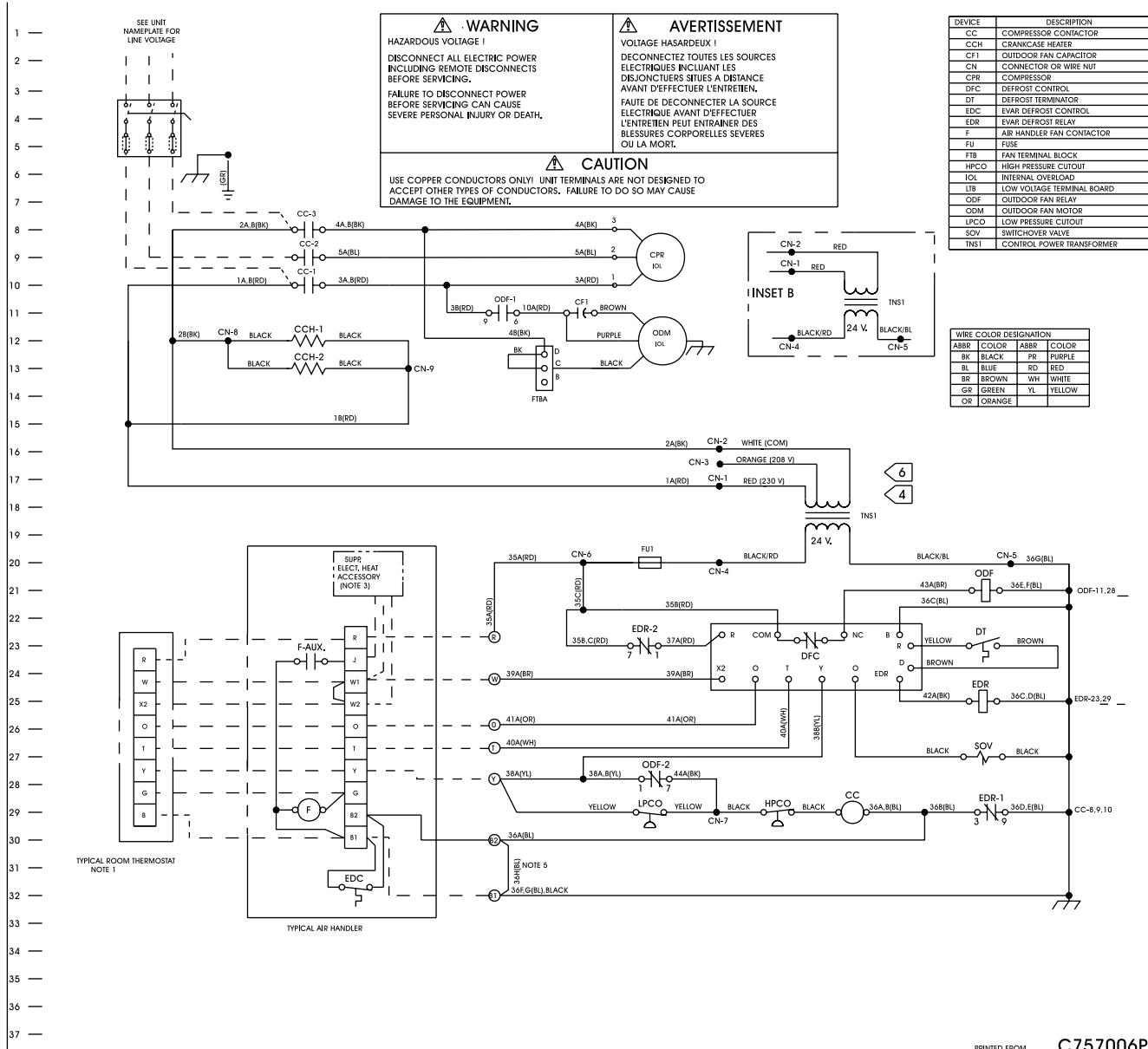
TWA090A3
TWA090A4
TWA090AW
TWA120A4
TWA120AW
TWA075AD
TWA100AD

C757006P06



TRANE®

Typical Wiring (Heat Pump)



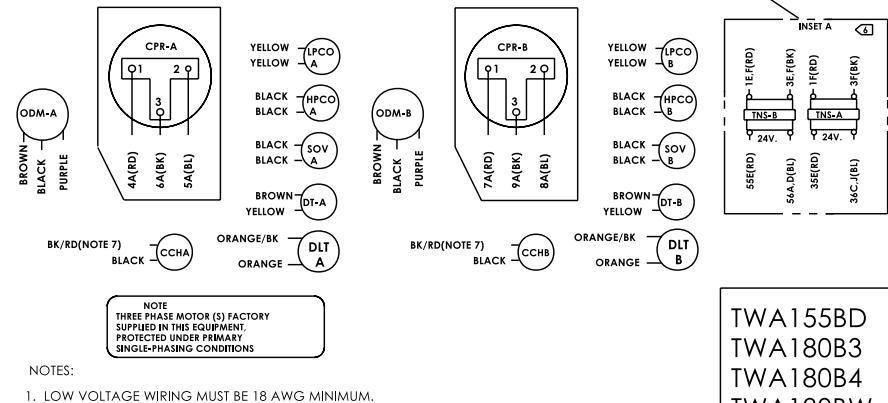
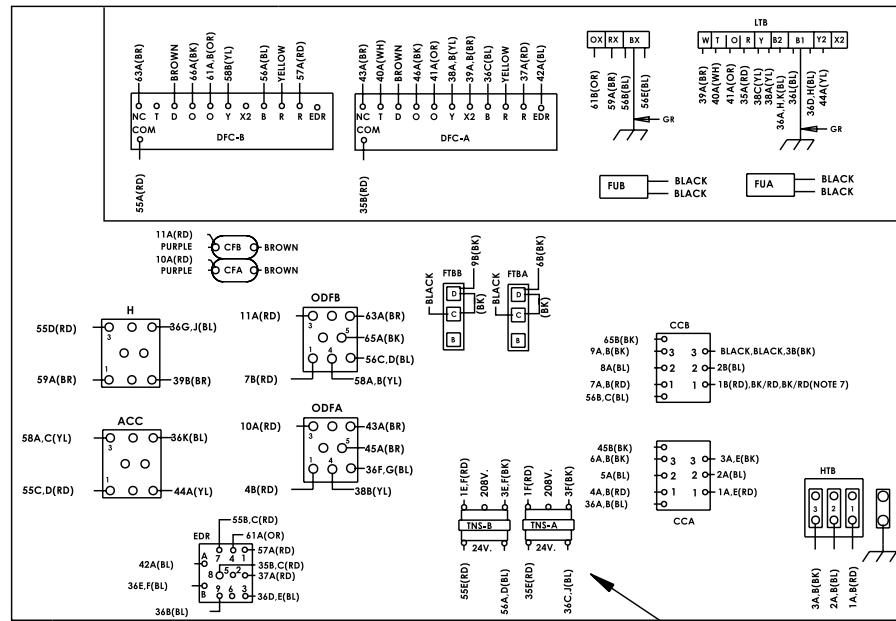


TRANE®

Typical Wiring (Heat Pump)

Heat Pump — Dual Compressors

Typical unit wiring diagram. For specific wiring, see individual Service Facts.



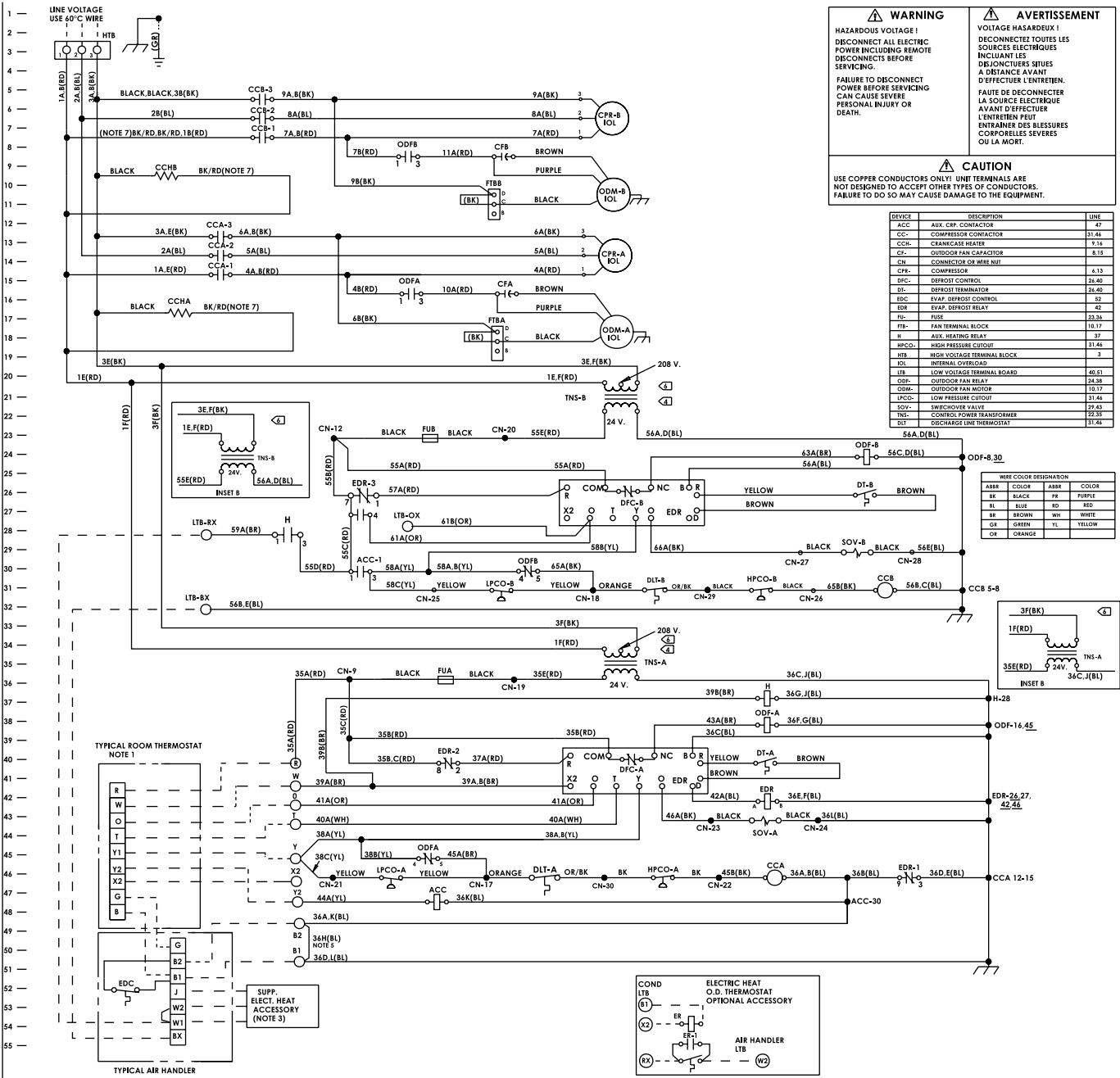
NOTES

1. LOW VOLTAGE WIRING MUST BE 18 AWG MINIMUM.
2. MAXIMUM EXTERNAL LOW VOLTAGE LOAD 24 V.A.C. (DOES NOT INCLUDE ACCESSORIES):
CKTA (TNSA) IS 1.6 AMPS
CKTB (TNSB) IS 2.3 AMPS
3. SEE WIRING DIAGRAM WITH HEATER FOR DETAILS OF HEATER WIRING.
4. CONNECTIONS SHOWN ARE FOR 230V/60HZ/3 PH. WHEN 208V/60HZ/3PH OPERATION IS REQUIRED:
(A) AT TRANSFORMER "A" AND "B" REMOVE 1E,F(RD) WIRE FROM TRANSFORMERS AND CONNECT TO 208V. TERMINAL ON TRANSFORMER.
5. IF EVAPORATOR DEFROST CONTROL (EDC) IS USED, REMOVE JUMPER BETWEEN "B1" AND "B2".
6. CONNECTIONS FOR THE 230V/3PH/60HZ UNIT ARE SHOWN. FOR 400V, 460V, AND 575V UNITS, SEE TRANSFORMER CONNECTIONS IN INSETS "A" AND "B".
7. ON ALL NOTE 7 REFERENCES, LEAD COLOR IS BK/RD ON TWA155BD/TWA180B4 MODELS, BK/BR ON TWA180BW MODEL, AND BK/YL ON TWA180B3 MODEL.

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Typical Wiring

(Heat Pump)





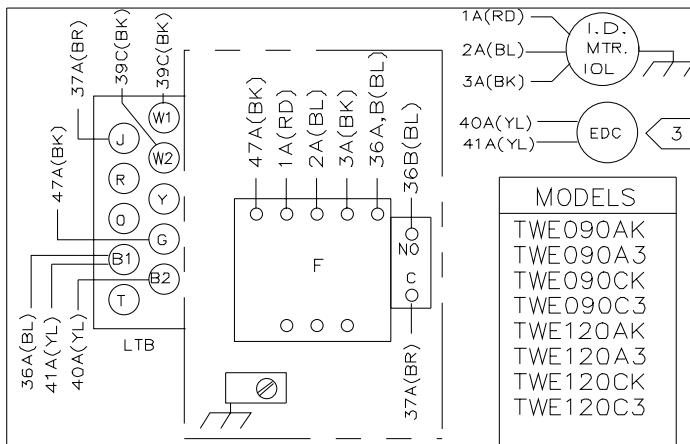
TRANE®

Typical Wiring

(Air Handler)

Air Handler

Typical unit wiring diagram. For specific wiring, see individual Service Facts.



NOTES: 1. SEE FIELD WIRING DIAGRAMS IN PRODUCT LITERATURE FOR PROPER FIELD CONNECTIONS.

2. ON MODELS WITH A "3" IN THE 8TH DIGIT ON THE UNIT NAMEPLATE STAMPING, UNIT IS FACTORY WIRED FOR 208-230 VOLT POWER. FOR 460V POWER, RECONNECT MOTOR PER DIAGRAM ON MOTOR.

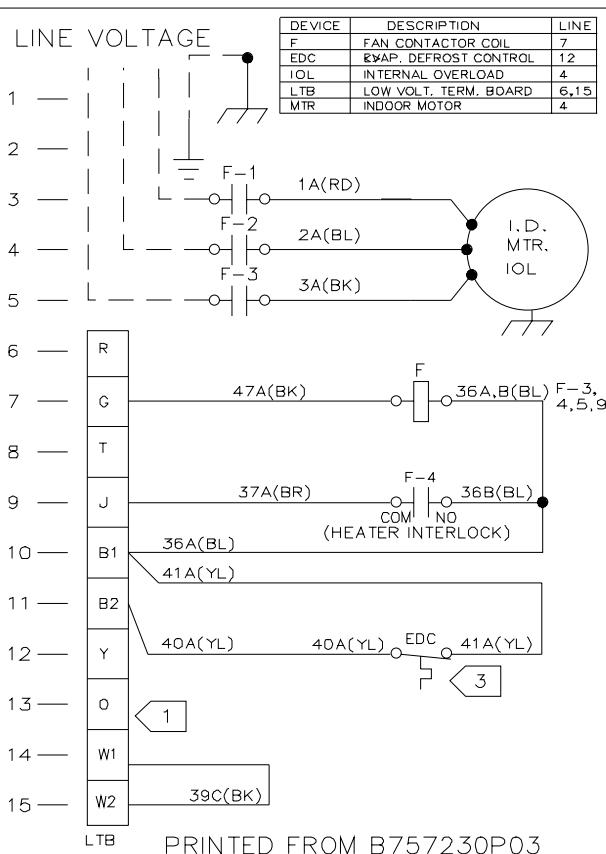
3. THE EDC SWITCH IS NOT PROVIDED ON MODELS WITH A "C" IN THE 7TH DIGIT ON THE UNIT NAMEPLATE STAMPING.

WIRE COLOR DESIGNATION			
ABBR	COLOR	ABBR	COLOR
BK	BLACK	BR	BROWN
BL	BLUE	YL	YELLOW

WARNING
HAZARDOUS VOLTAGE!
DISCONNECT ALL ELECTRIC POWER INCLUDING
REMOTE DISCONNECTS
BEFORE SERVICING.
FAILURE TO DISCONNECT POWER BEFORE
SERVICING CAN CAUSE
SEVERE PERSONAL
INJURY OR DEATH.

 **AVERTISSEMENT**
VOLTAGE HASARDEUX! DECONNECTEZ TOUTES LES SOURCES ELECTRIQUES INCLUANT LES DISJONCTEURS SITUÉS A DISTANCE AVANT D'EFFECTUER L'ENTRETIEN. FAUTE DE DECONNECTER LA SOURCE ELECTRIQUE AVANT D'EFFECTUER L'ENTRETIEN PEUT ENTRAINER DES BLESSURES CORPORELLES SEVERES OU LA MORT.

CAUTION
USE COPPER CONDUCTORS ONLY! UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS. FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.



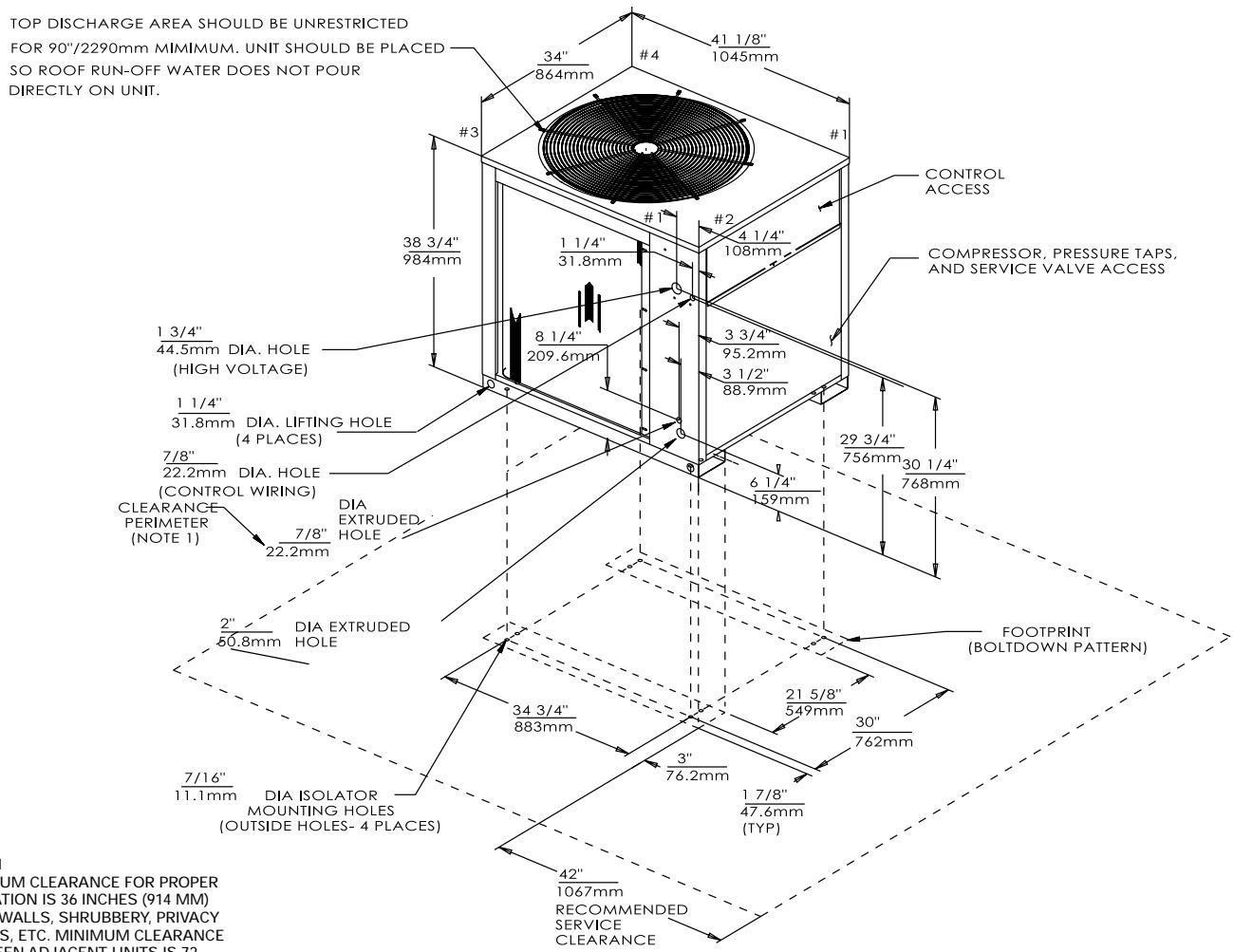
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Dimensional Data

(Heat Pump)

Figure DD-1 — TWA075 Heat Pump

All dimensions are in inches and millimeters.

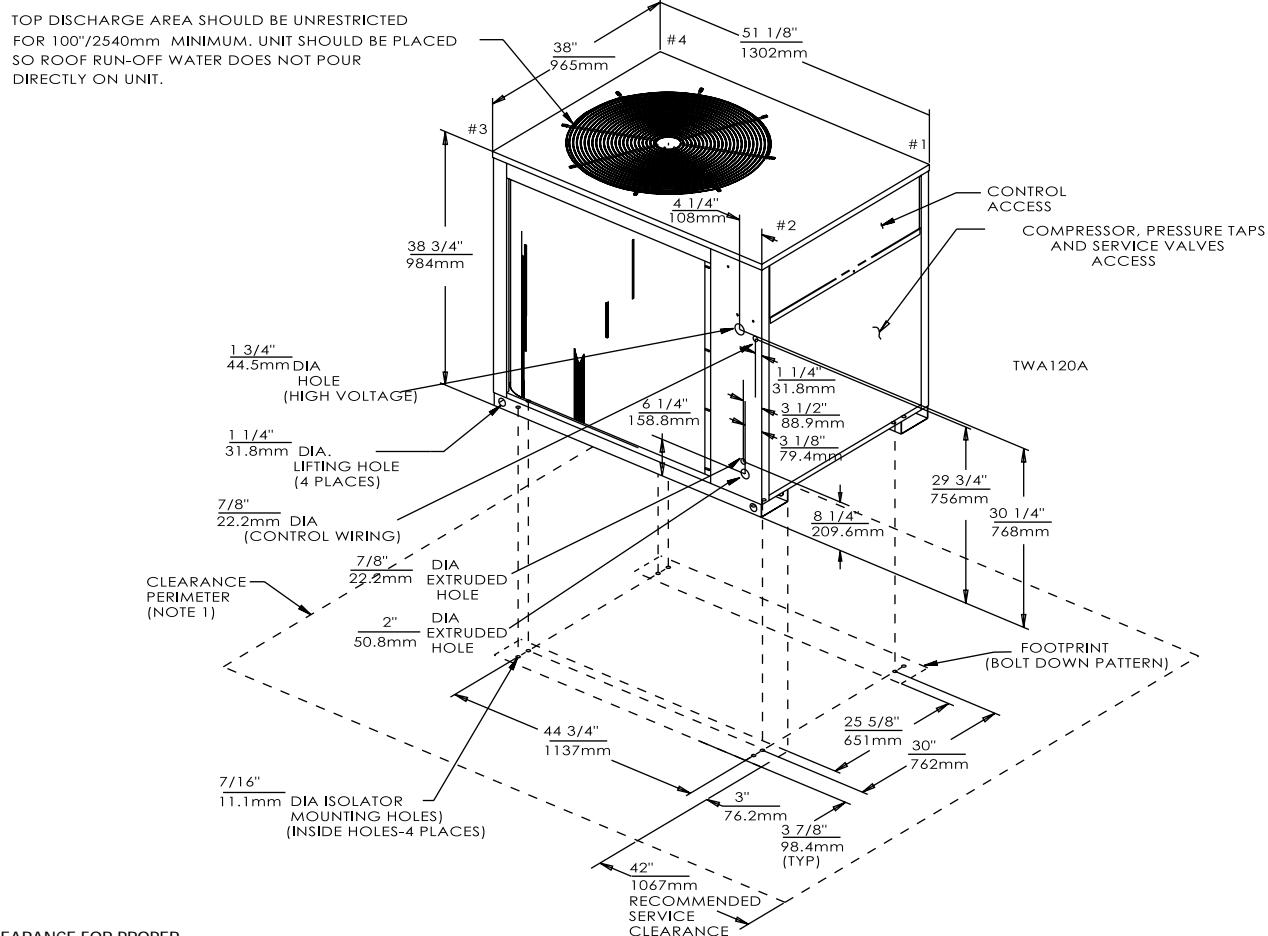


Dimensional Data

(Heat Pump)

Figure DD-2 — 10 Ton TWA100A Heat Pump

All dimensions are in inches and millimeters.



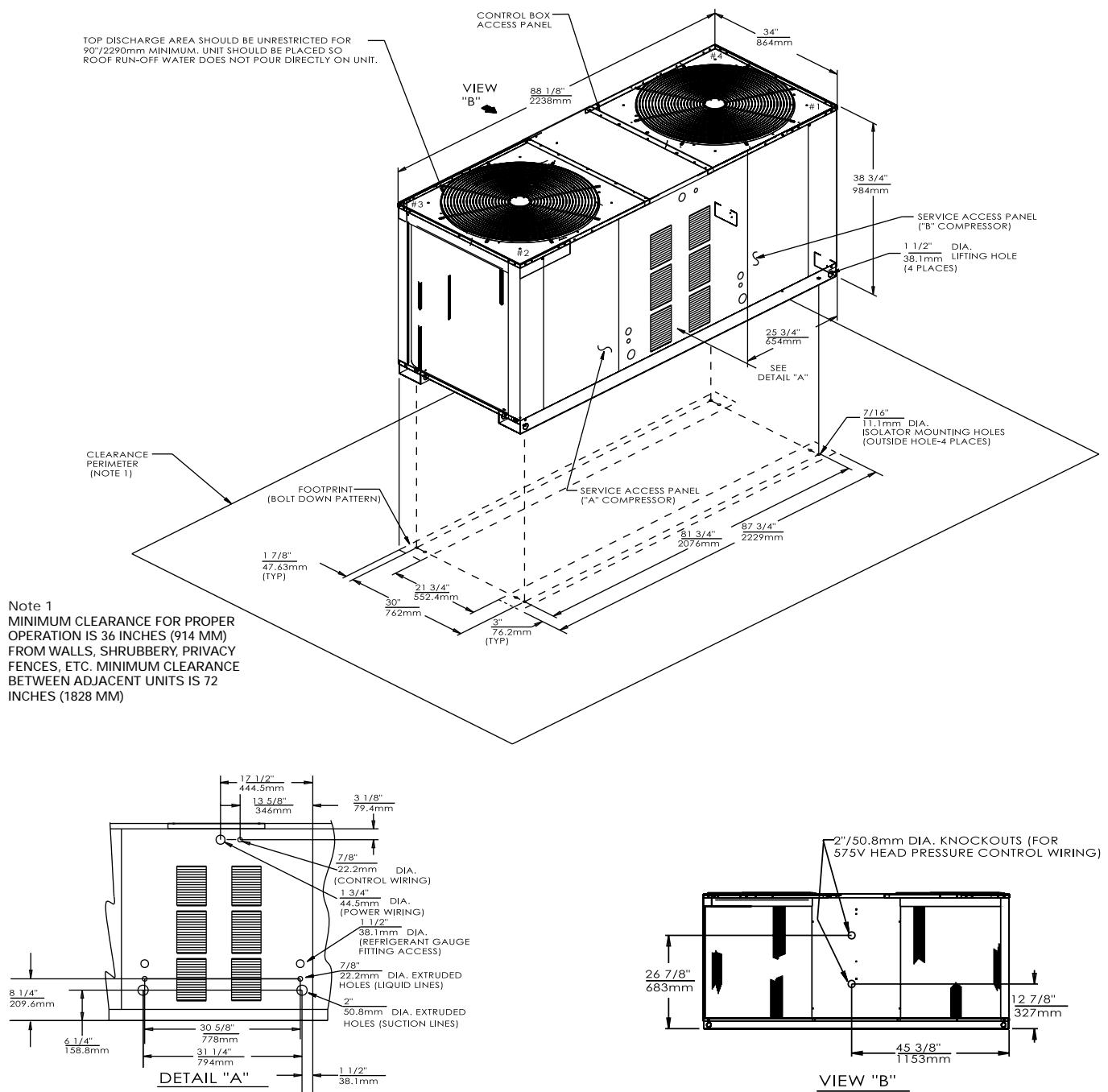
Note 1
 MINIMUM CLEARANCE FOR PROPER
 OPERATION IS 36 INCHES (914 MM)
 FROM WALLS, SHRUBBERY, PRIVACY
 FENCES, ETC. MINIMUM CLEARANCE
 BETWEEN ADJACENT UNITS IS 72
 INCHES (1828 MM)

Dimensional Data

(Heat Pump)

Figure DD-3 — TWA155B Heat Pump

All dimensions are in inches and millimeters.

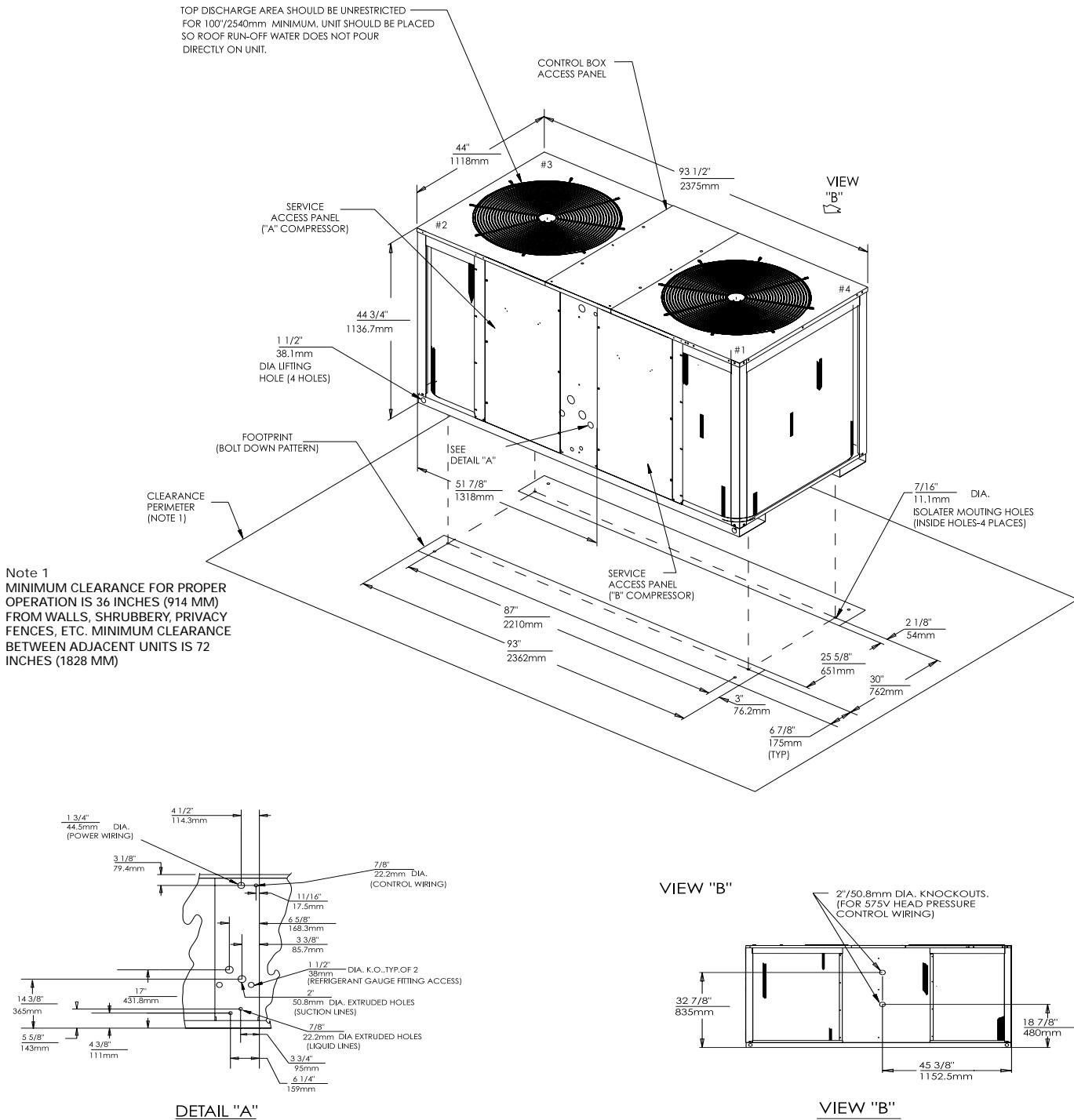


Dimensional Data

(Heat Pump)

Figure DD-4 — TWA200B Heat Pump

All dimensions are in inches and millimeters.

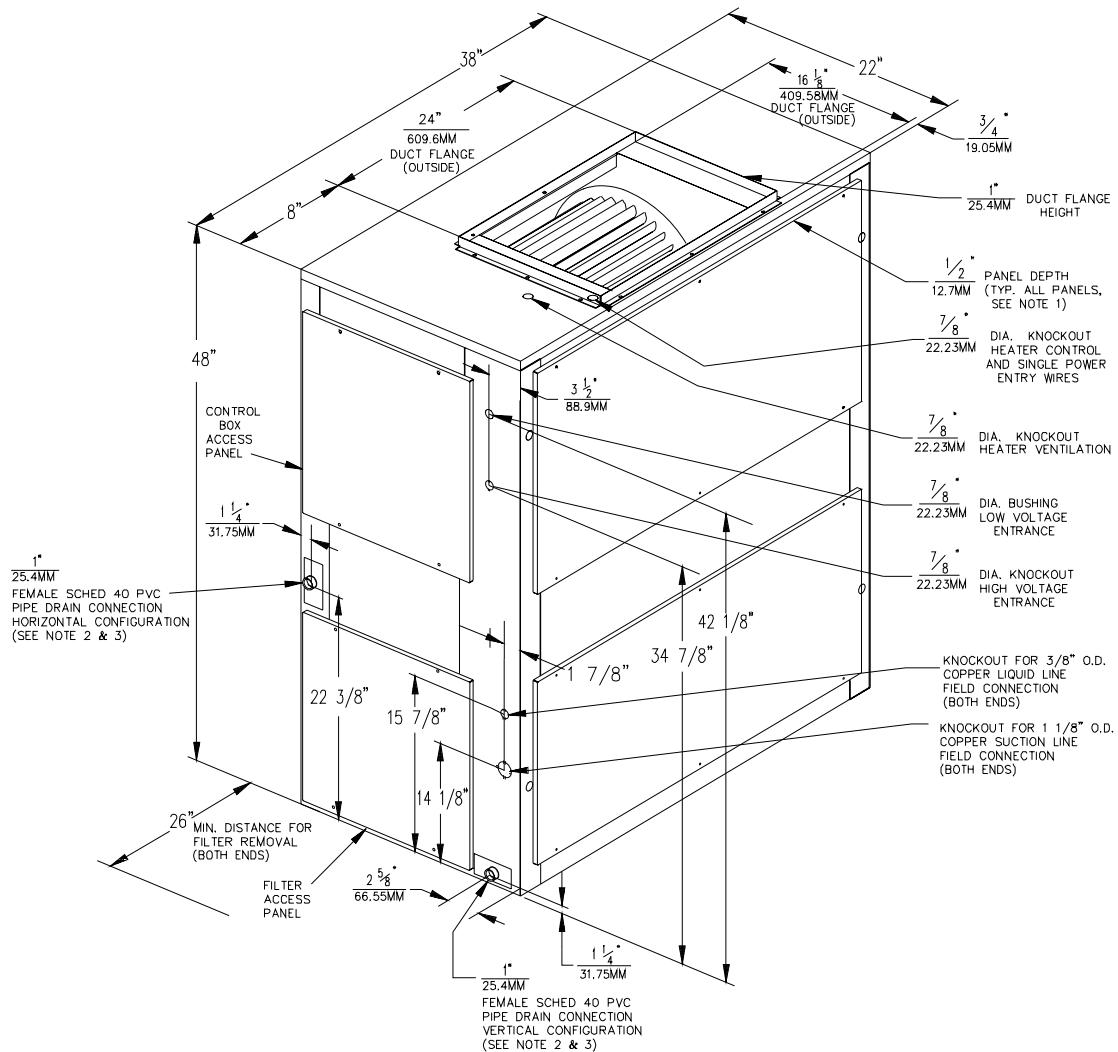


Dimensional Data

(Air Handler)

Figure DD-5 — TWE050A Air Handlers

All dimensions are in inches and millimeters.



Notes:

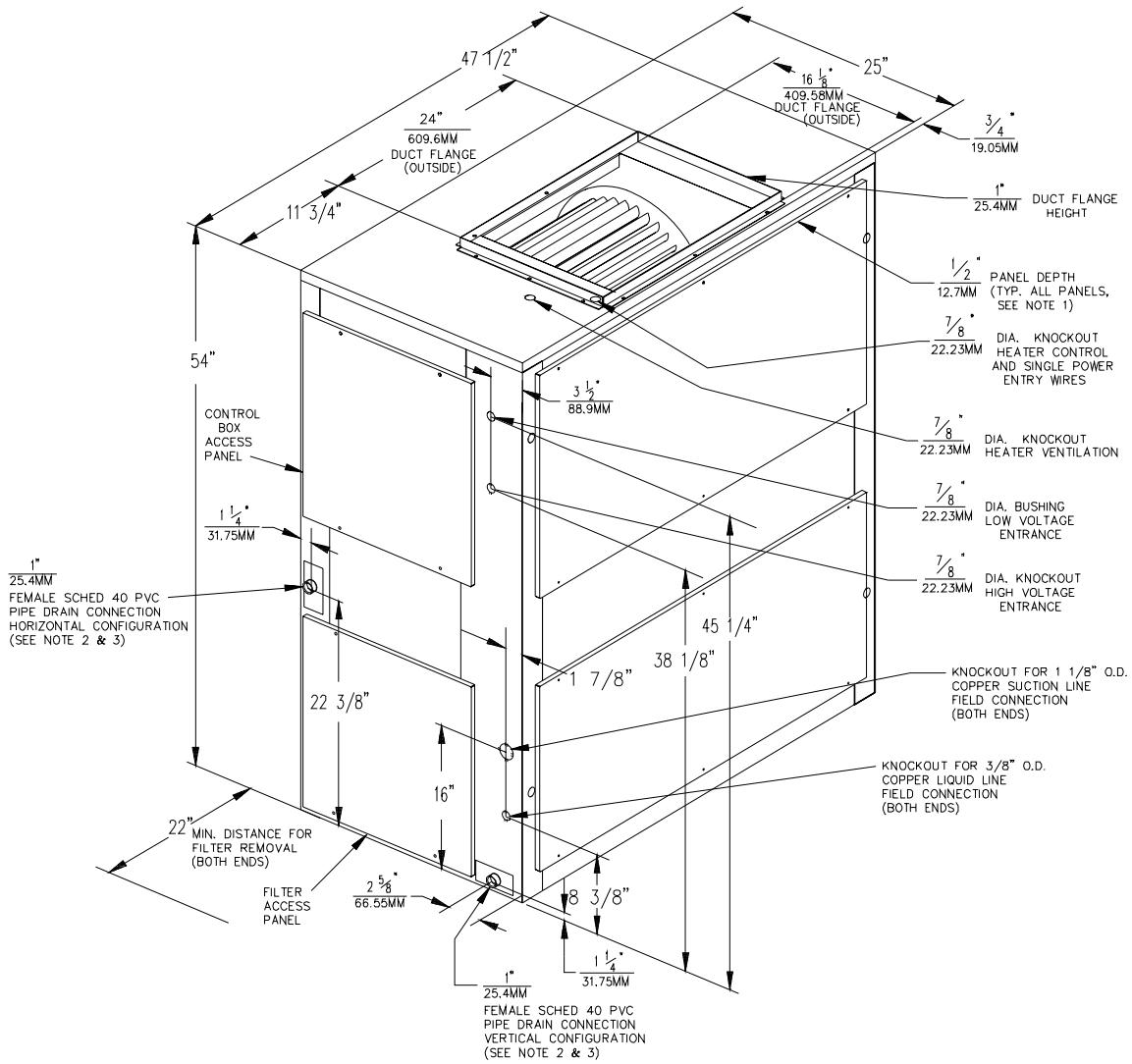
1. Length, Width, and Height Dimensions do not include 1/2" (12.7mm) access panel depth.
2. Removable drain pan and attached drain connection may be installed on either end of unit in either the vertical or horizontal configuration. Plastic drain pan access plate on the end of unit opposite drain connection must be removed to slide drain pan out for cleaning. Access plate must be reinstalled after sliding drain pan back into unit.
3. If periodic drain pan cleaning is required, allow room for partial removal of pan on drain connection end of unit.



Dimensional Data (Air Handler)

Figure DD-6 — TWE075A Air Handler

All dimensions are in inches and millimeters.



Notes:

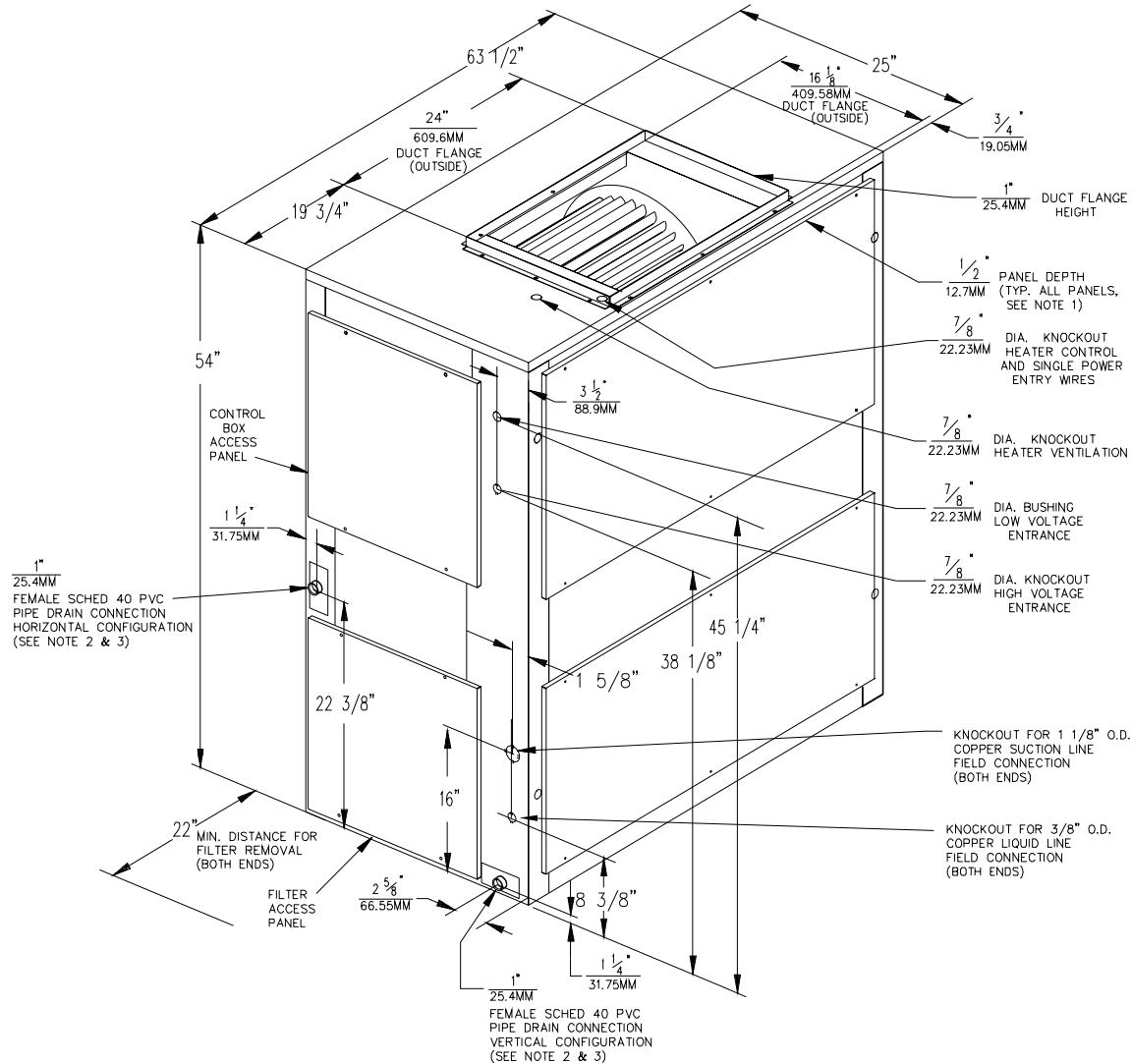
1. Length, Width, and Height Dimensions do not include 1/2" (12.7mm) access panel depth.
2. Removable drain pan and attached drain connection may be installed on either end of unit in either the vertical or horizontal configuration. Plastic drain pan access plate on the end of unit opposite drain connection must be removed to slide drain pan out for cleaning. Access plate must be reinstalled after sliding drain pan back into unit.
3. If periodic drain pan cleaning is required, allow room for partial removal of pan on drain connection end of unit.

Dimensional Data

(Air Handler)

Figure DD-7—TWE100A Air Handler

All dimensions are in inches and millimeters.



Notes:

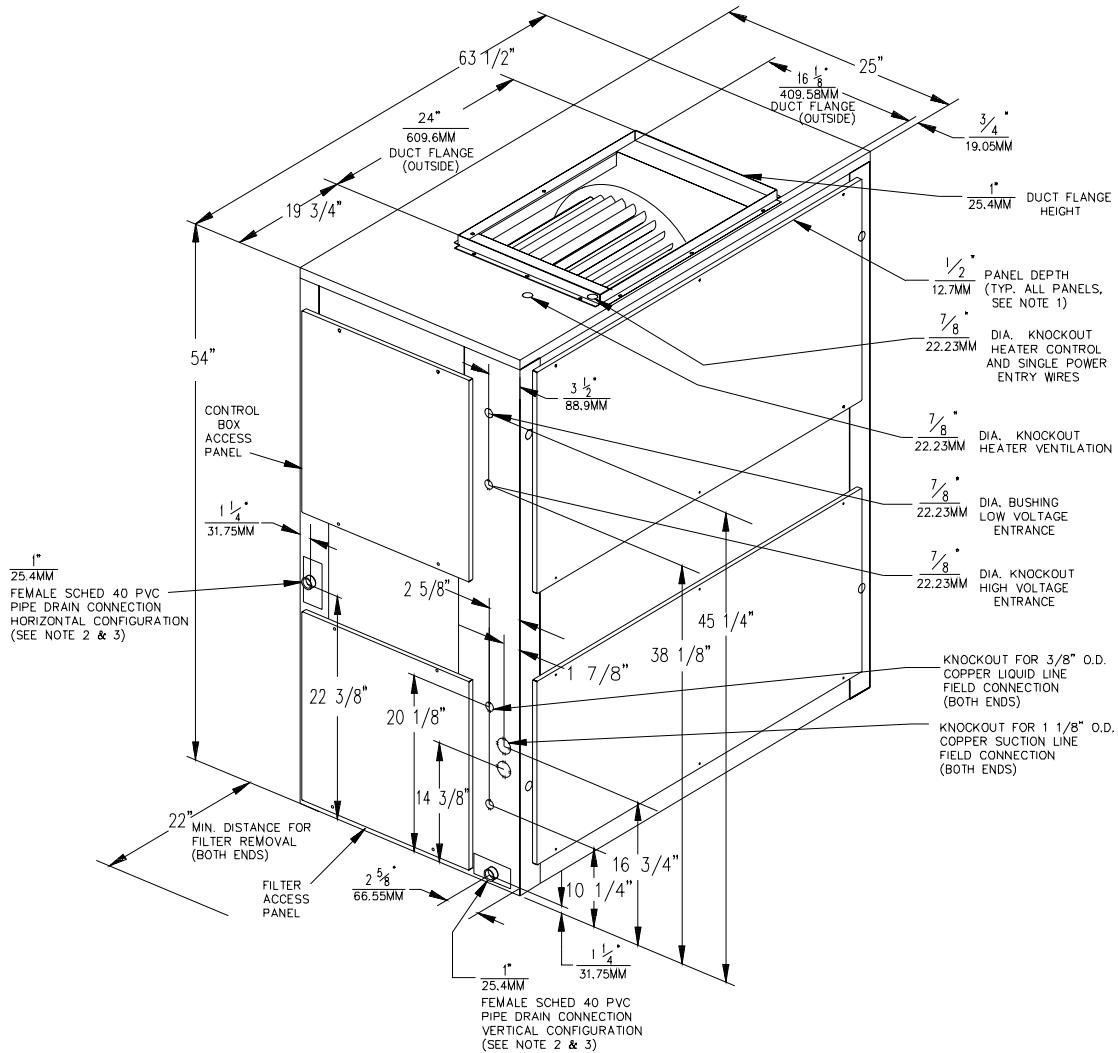
- Length, Width, and Height Dimensions do not include 1/2" (12.7mm) access panel depth.
- Removable drain pan and attached drain connection may be installed on either end of unit in either the vertical or horizontal configuration. Plastic drain pan access plate on the end of unit opposite drain connection must be removed to slide drain pan out for cleaning. Access plate must be reinstalled after sliding drain pan back into unit.
- If periodic drain pan cleaning is required, allow room for partial removal of pan on drain connection end of unit.

Dimensional Data

(Air Handler)

Figure DD-8—TWE100B Air Handler

All dimensions are in inches and millimeters.



Notes:

1. Length, Width, and Height Dimensions do not include 1/2" (12.7mm) access panel depth.
2. Removable drain pan and attached drain connection may be installed on either end of unit in either the vertical or horizontal configuration. Plastic drain pan access plate on the end of unit opposite drain connection must be removed to slide drain pan out for cleaning. Access plate must be reinstalled after sliding drain pan back into unit.
3. If periodic drain pan cleaning is required, allow room for partial removal of pan on drain connection end of unit.

Dimensional Data

(Air Handlers)

Figure DD-9—TWE050A, 075A, 100A and TWE100B Air Handler

All dimensions are in inches and millimeters.

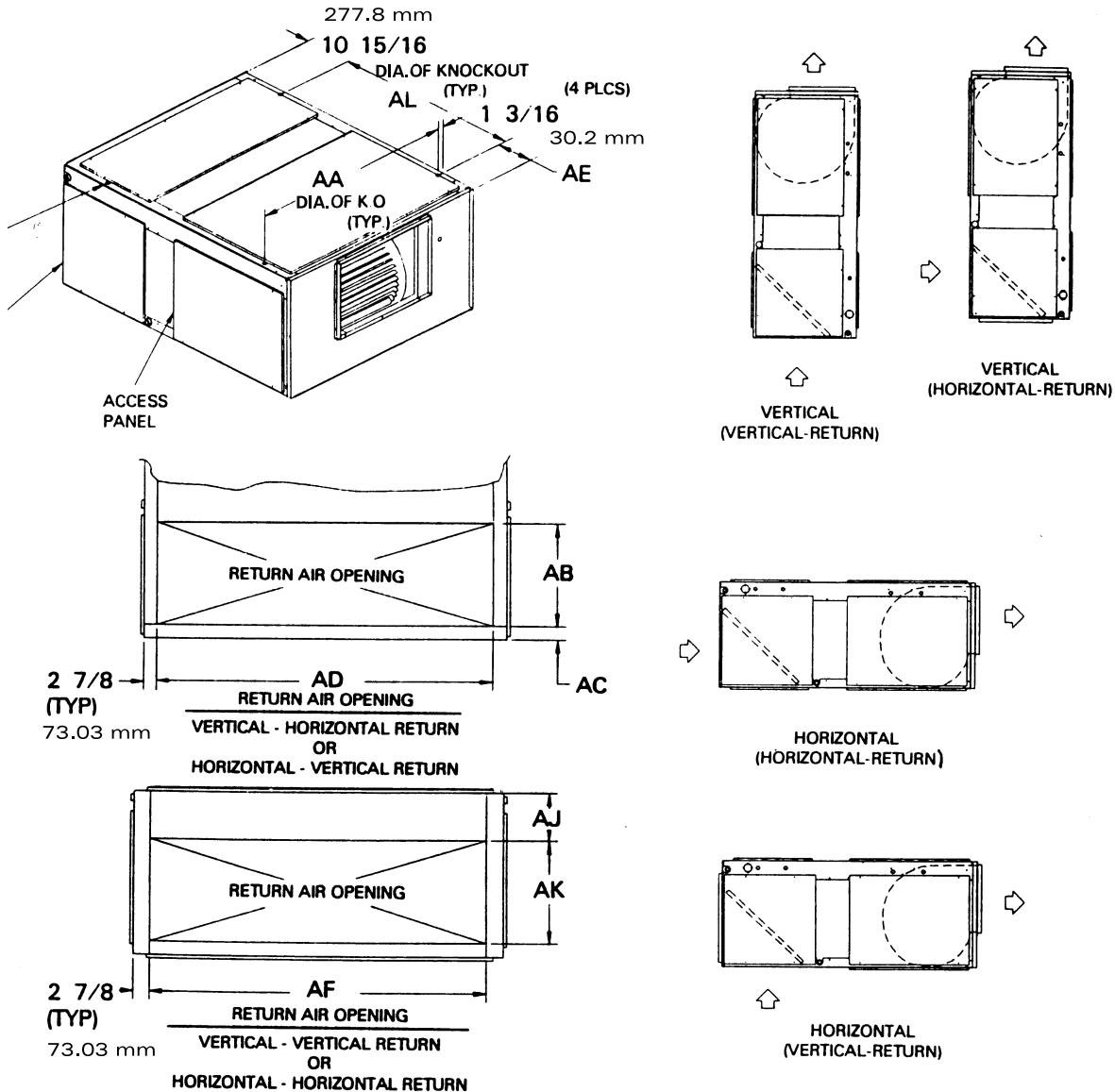


Table DD-1—Air Handler Dimensions — in. (mm)

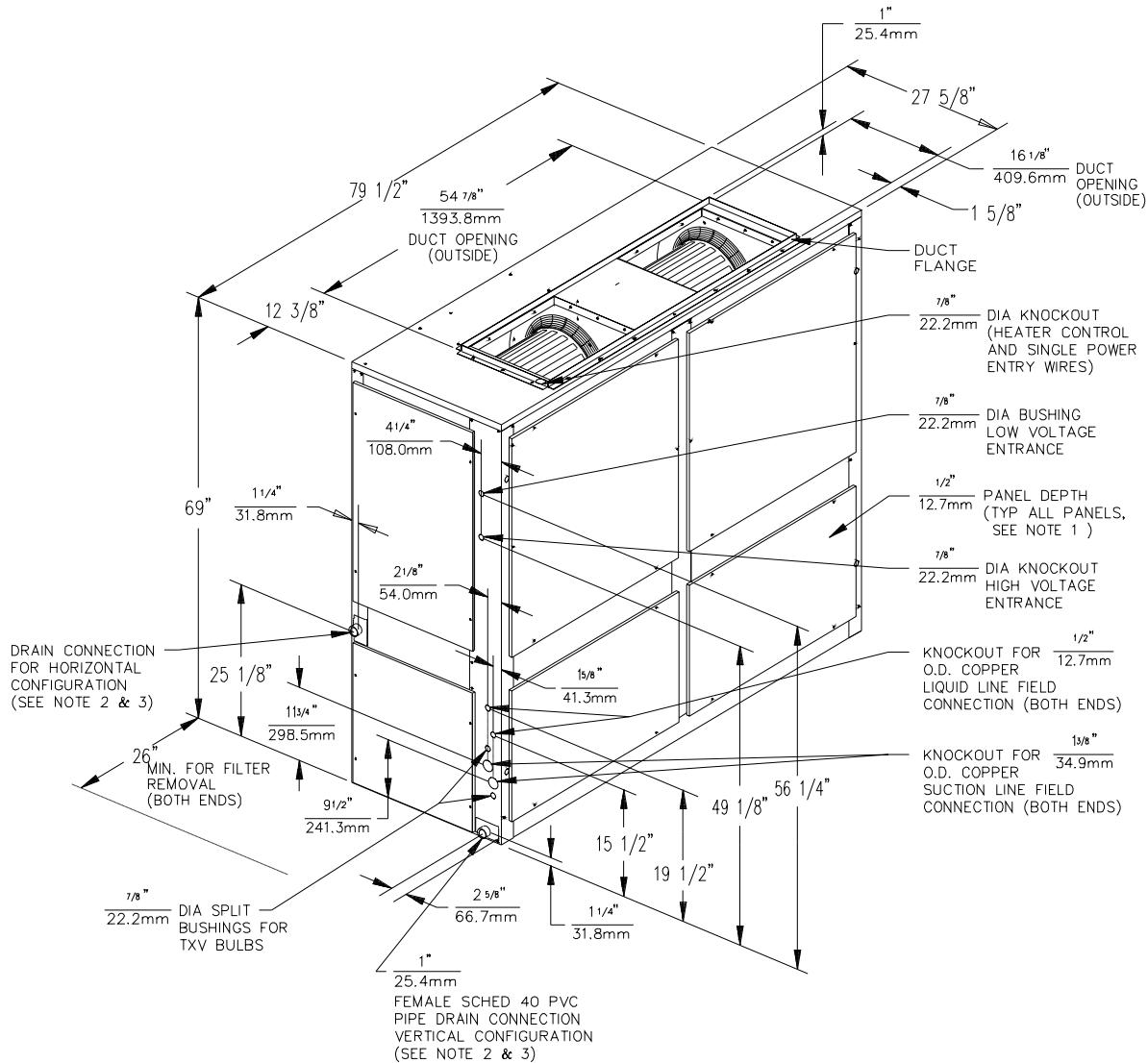
Model No.	AA	AB	AC	AD	AE	AF	AJ	AK	AL
TWE050A	35 5/8 (905)	12 1/16 (306.4)	1 5/8 (41.3)	32 1/4 (819.2)	2 15/16 (74.6)	32 1/4 (819.2)	7 13/16 (198.4)	12 3/8 (314.3)	34 9/16 (878)
TWE075A	45 1/8 (1146.2)	16 (406.4)	1 11/16 (42.9)	41 15/16 (1065.2)	6 5/8 (168.3)	41 3/4 (1060.5)	7 (177.8)	16 (406.4)	36 7/8 (936.6)
TWE100A	61 1/8 (1552.6)	16 (406.4)	1 11/16 (42.9)	57 15/16 (1471.6)	6 5/8 (168.3)	57 13/16 (1468.4)	7 (177.8)	16 (406.4)	36 7/8 (936.6)
TWE100B	61 1/8 (1552.6)	16 (406.4)	1 11/16 (42.9)	57 15/16 (1471.6)	6 5/8 (168.3)	57 13/16 (1468.4)	7 (177.8)	16 (406.4)	36 7/8 (936.6)

Dimensional Data

(Air Handler)

Figure DD-10— TWE155B Air Handler

All dimensions are in inches and millimeters.



Notes:

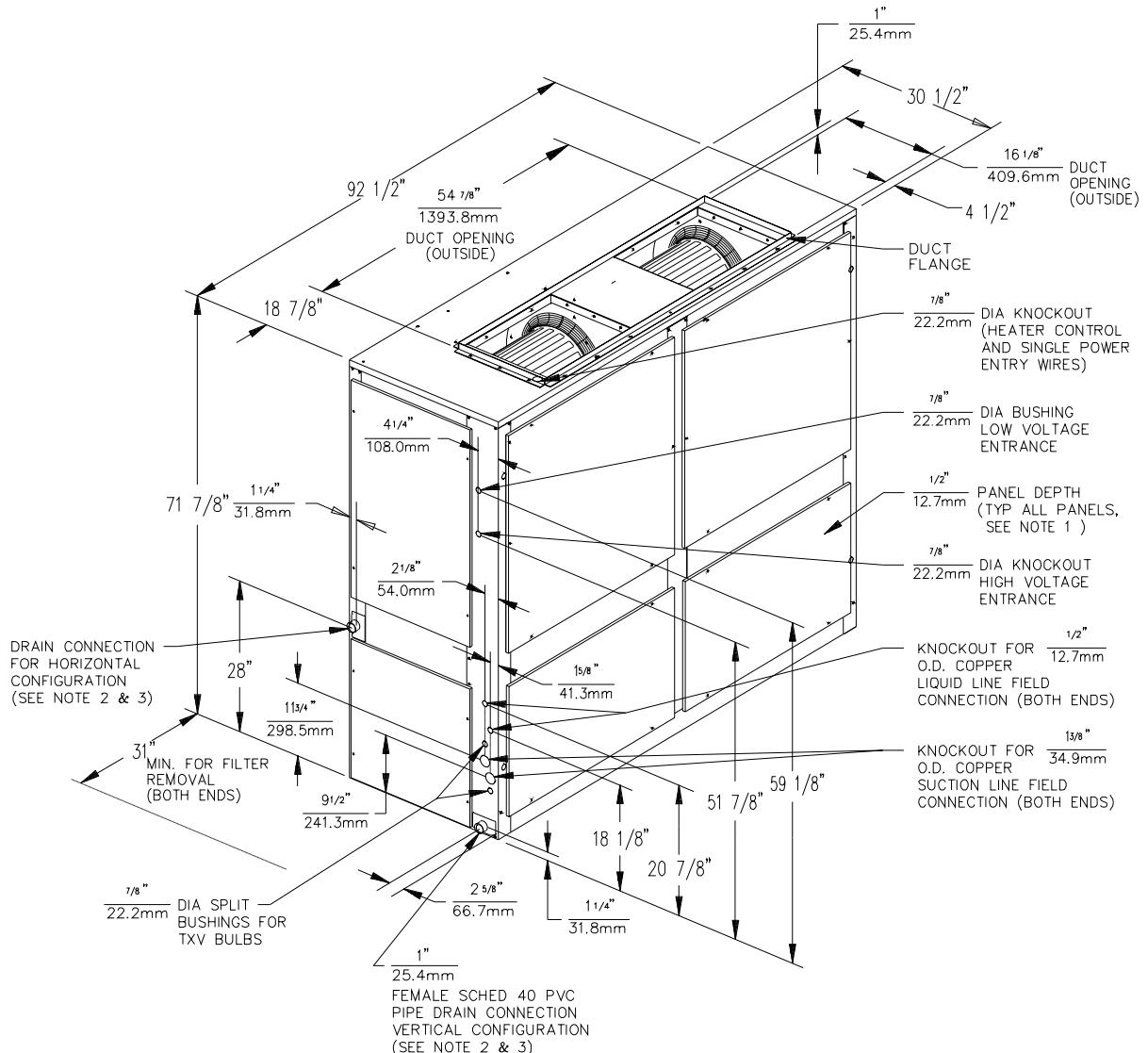
1. Length, Width, and Height Dimensions do not include 1/2" (12.7mm) access panel depth.
2. Removable drain pan and attached drain connection may be installed on either end of unit in either the vertical or horizontal configuration. Plastic drain pan access plate on the end of unit opposite drain connection must be removed to slide drain pan out for cleaning. Access plate must be reinstalled after sliding drain pan back into unit.
3. If periodic drain pan cleaning is required, allow room for partial removal of pan on drain connection end of unit.

Dimensional Data

(Air Handlers)

Figure DD-11 — TWE200B Air Handler

All dimensions are in inches and millimeters.



Notes:

- Length, Width, and Height Dimensions do not include 1/2" (12.7mm) access panel depth.
- Removable drain pan and attached drain connection may be installed on either end of unit in either the vertical or horizontal configuration. Plastic drain pan access plate on the end of unit opposite drain connection must be removed to slide drain pan out for cleaning. Access plate must be reinstalled after sliding drain pan back into unit.
- If periodic drain pan cleaning is required, allow room for partial removal of pan on drain connection end of unit.

Dimensional Data

(Air Handlers)

Figure DD-12—TWE155B and 200B Air Handlers

All dimensions are in inches and millimeters.

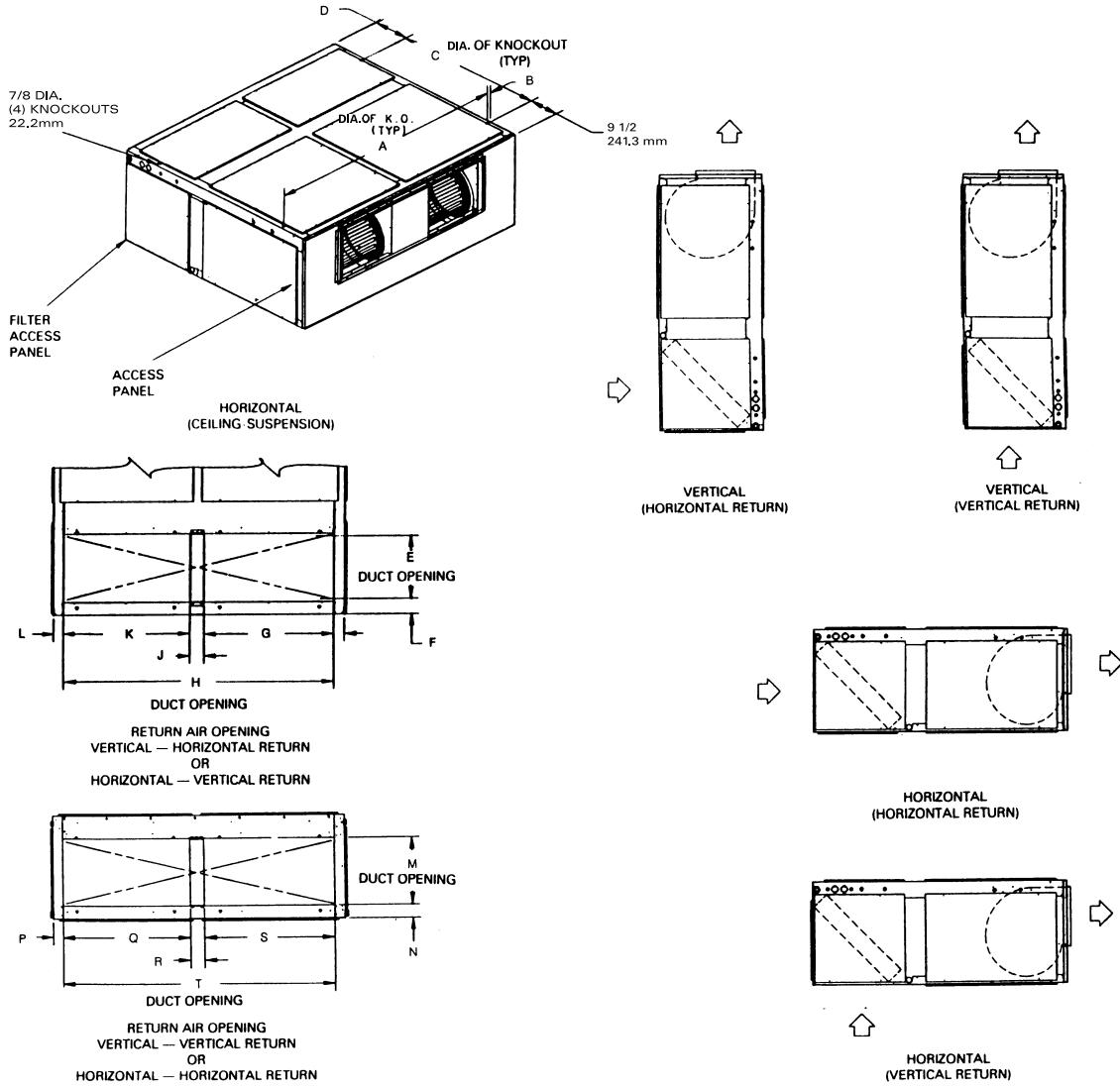


Table DD-2—Air Handler Dimensions — in. (mm)

Model No.	A	B	C	D	E	F	G	H	J
TWE155B	77 1/4 (1962.2)	1 3/16 (30.2)	48 (1219.2)	11 7/16 (290.5)	18 (457.2)	3 3/8 (85.7)	35 1/16 (890.6)	73 7/8 (1876.4)	3 3/4 (95.3)
TWE200B	89 1/4 (2267)	1 11/16 (42.9)	50 13/16 (1290.6)	11 1/2 (292.1)	20 1/8 (511.2)	3 1/16 (77.8)	39 1/8 (993.8)	82 7/8 (2105)	4 9/16 (115.9)

Table DD-2—Air Handler Dimensions — in. (mm) (Continued)

Model No.	K	L	M	N	P	Q	R	S	T
TWE155B	35 1/16 (890.6)	2 13/16 (71.4)	18 (457.2)	3 9/16 (90.5)	2 7/8 (73)	35 1/16 (890.6)	3 3/4 (95.3)	35 1/16 (890.6)	73 3/8 (1863.7)
TWE200B	39 1/8 (993.8)	4 7/8 (123.8)	20 (508)	3 (76.2)	4 13/16 (122.2)	39 1/8 (993.8)	4 9/16 (115.9)	39 1/8 (993.8)	82 7/8 (2105)

Dimensional Data

(Accessories)

Figure DD-13—Electric Heater for TWE050, 075, 100 Air Handlers

All dimensions are in inches and millimeters.

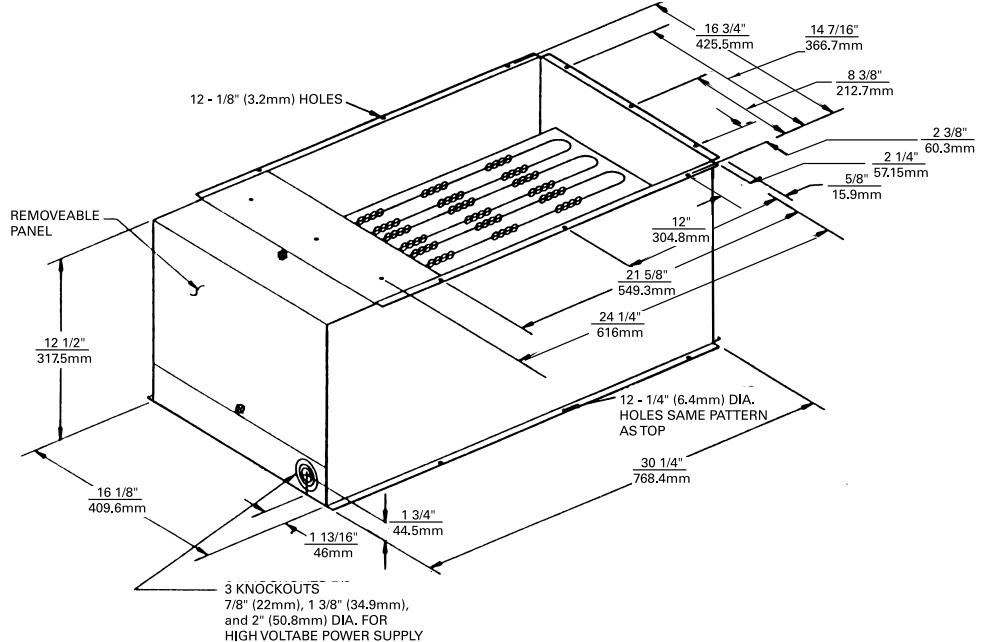
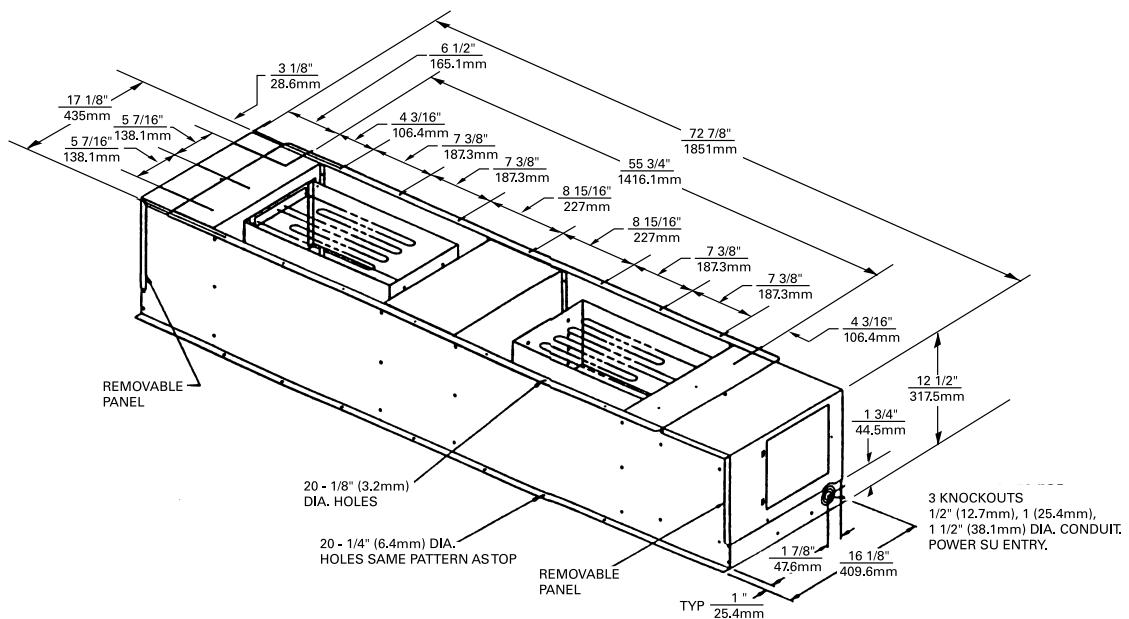


Figure DD-14—Electric Heater for TWE155 and 200 Air Handlers



Mechanical Specifications

Heat Pumps

General

Unit shall be assembled on heavy gauge steel mounting/lifting rails and shall be weather proofed. Unit shall include a hermetic scroll or reciprocating compressor(s), plate fin condenser coil, fans and motors, controls, and holding charge of nitrogen. Operating Range shall be between 115° F (46°C) and 50°F (10°C) in cooling as standard from factory. Unit shall be UL 1995 listed and rated in accordance with ARI Standard 340/360.

Casing

Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished with a weather-resistant baked enamel finish. Unit's surface shall be tested 500 hours in salt spray test. Unit shall have removable end panels which allow access to all major components and controls.

Refrigeration System – Single Compressor

TWA075A, TWA100A units shall have a single refrigeration circuit. Each refrigeration circuit has an integral subcooling circuit. A refrigeration filter drier, expansion valve, and check valves shall be provided as standard. The unit shall have both a liquid line and suction gas line service valve with gauge port.

Unit shall have one direct drive, Trane hermetic scroll compressor with centrifugal oil pump providing positive lubrication to moving parts. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of nameplate voltage. Crankcase heater, discharge line thermostat, and current-sensitive motor overloads shall be included for maximum protection. Scroll type compressor shall provide inherently low vibration and noise by having no suction and discharge valves. External high and low pressure cutout devices shall be provided. Evaporator defrost control provided in indoor blower coil unit shall prevent compressor slugging by temporarily interrupting compressor operation when low evaporator coil temperatures are encountered.

Refrigeration System – Dual Compressor

TWA155B, TWA200B units shall have two separate and independent refrigeration circuits. Each refrigeration circuit shall have an integral subcooling circuit. A refrigeration filter drier shall be provided as standard. Unit shall have both a liquid line and suction gas line service valve with gauge ports.

Unit shall have two Trane direct drive, hermetic scroll compressors with centrifugal oil pump and provide positive lubrication to all moving parts. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of nameplate voltage. Crankcase heater, and current-sensitive motor overloads shall be included for maximum protection. Scroll type compressor shall provide inherently low vibration and noise by having no suction and discharge valves. External high and low pressure cutout devices shall be provided. Evaporator defrost control provided in indoor blower coil shall prevent compressor slugging by temporarily interrupting compressor operation when low evaporator coil temperatures are encountered.

Condenser Coil

Coils shall be internally finned or smooth bore, 3/8" (10mm) copper tubes mechanically bonded to a configured aluminum plate fin as standard. Coil shall be factory pressure and leak tested to 420 psig (2,930 kPa) air pressure. Metal grilles with PVC coating for coil protection is optional.

Condenser Fan And Motor(s)

Direct-drive, statically and dynamically balanced, 26 or 28 inch (660 or 711 mm) propeller fan(s) with aluminum blades and electro-coated steel hubs shall be used in draw-through vertical discharge position. Either permanently lubricated totally enclosed or open construction type motors shall be provided and shall have built-in current and thermal overload protection. Motor(s) shall have either ball or sleeve bearing type.

Controls

Heat pump units shall be completely factory wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Control wiring

shall be 24-volt control circuit which includes fusing and control transformer. Units shall provide external location for mounting a fused disconnect device. Time delay timers to prevent compressors in dual compressor units from simultaneous start-up and anti-recycle timers are available as optional accessories.

Defrost Controls

Electronic timed initiated, temperature terminated defrost system with choice of 50, 70, or 90 minute cycle shall be included. Timed override limits defrost cycle to 10 minutes.

Low Ambient Operation

Standard units shall start and operate to approximately 50°F (10°C) when matched with Trane air handlers and coils. Optional head pressure control accessory permits operation to 0°F (-17.8°C).

ACCESSORIES

Low Ambient Head Pressure Control — This accessory shall modulate the RPM of unit outdoor fan motor in response to outdoor ambient temperatures and liquid line temperature. Accessory provides unit cooling operation to outdoor temperatures of 0°F (-17.8°C).

Vibration Isolation Packages — This accessory shall reduce transmission of noise and vibration to building structures, equipment, and adjacent spaces. Packages shall be available in either neoprene-in-shear or spring-flex types.

Time Delay Relay — This accessory shall prevent compressors in dual compressor unit from coming on line simultaneously. Timer shall be 24-volt, 60 cycle, with four minute timing period.

Anti-Short-Cycle Timer — This accessory shall prevent rapid on-off compressor cycling in light load conditions by not allowing compressor to operate for 5-7 minutes upon shutdown. This accessory shall consist of a 24-volt, 60 cycle, solid state timing device with either 5 or 7 minute fixed-off timing period.

Mechanical Specifications

Condenser Coil Guard — Metal grille with PVC coating shall be provided to alleviate coil damage.

Black Epoxy Coated Condenser Coil — This factory installed option is designed to provide corrosion protection of air cooled condenser coils for seacoast application. The black epoxy coil protection is a factory applied thermoset vinyl coating, bonded to normal aluminum fin stock. The uniform thickness of the bonded vinyl layer exhibits excellent corrosion protection in salt spray tests performed in accordance with ASTM B177.

Air Handlers

General

Air handler units shall be completely factory assembled including coil, condensate drain pan, fan motor(s), filters, and controls in an insulated casing that can be applied in either vertical or horizontal configuration. Unit shall be rated and tested in accordance with ARI standard 340/360. Unit shall be UL listed and labeled in accordance with UL 1995 for indoor blower coil units.

Casing

Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished with a weather-resistant baked enamel finish. Casing shall be completely insulated with cleanable, foil faced, fire-retardant, permanent, odorless, glass fiber material. All insulation edges shall be either captured or sealed. Knockouts shall be provided for unit electrical power and refrigerant piping connections. Captive screws shall be standard on all access panels.

Refrigeration System

The TWE050A, TWE075A, TWE100A units shall have a single refrigeration circuit and the TWE100B, TWE155B, TWE200B units shall have dual refrigeration circuits. Each refrigeration circuit is controlled by a factory installed thermal expansion valve.

Evaporator Coil

Configured aluminum fin surface shall be mechanically bonded to 3/8" (10 mm) internally enhanced copper tubing and

shall be factory pressure and leak tested at 375 psig (2586 kPa). Coil is arranged for draw-through airflow and shall provide a double sloped condensate drain pan constructed of PVC plastic. The drain pan shall be removable for cleaning. The condensate drain pan can be installed in any of four positions allowing for vertical or horizontal application and providing external connections on either side of the unit.

Evaporator Fan

Double inlet, double width, forward curved, centrifugal-type fan(s) with adjustable belt drive shall be standard. Thermal overload protection shall be standard on motor. Fan and motor bearings shall be permanently lubricated. Oversized motors shall be available as an option for high static application. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).

Controls

Magnetic evaporator fan contactor, low voltage terminal strip, check valve(s), and single point power entry shall be included. All necessary controls shall be factory-installed and wired. Evaporator defrost control shall be included to prevent compressor slugging by temporarily interrupting compressor operation when low evaporator coil temperatures are encountered.

Filters

One inch, throw-away filters shall be standard on TWE050A, TWE075A, TWE100A and TWE120B model air handlers. Filters shall be accessible from the side coil access panel. Filter rack can be field converted to two inch capability. Two inch, throw-away filters shall be standard on TWE155B and TWE200B models.

ACCESSORIES

Electric Heaters — UL and CSA approved electric heat modules shall be available for installation directly on fan discharge. Electric heaters shall be available in a wide range of capacities with one or two stage control, single-point electric power connection, and terminal strip connections. Electric heater elements shall be constructed of heavy-duty nickel chromium elements internally wye connected on 400 volt,

three phase. Each 400 volt heater shall have automatic line break high limit controls.

Discharge Plenums and Grilles

Accessory discharge plenums shall be available for vertical, free discharge applications. Plenums shall be constructed of heavy-gauge, zinc coated, galvanized steel finished with baked enamel to match the air handler unit. Grilles shall be satin finished aluminum and have four-way adjustable louvers.

Return Air Grilles — Accessory return air grille shall be provided for vertical front, free return applications. Grilles shall be installed in place of the front lower side panel. Grille shall be satin finished aluminum with non-adjustable louvers.

Mounting Subbase — The accessory shall be available for vertical floor mount configurations. Subbase shall be constructed of heavy gauge, zinc coated, galvanized steel with baked enamel finish to match air handler unit. Subbase is required in the vertical air flow application for condensate drain trapping and when isolators are required.

Vibration Isolators — This accessory shall reduce transmission of noise and vibration to building structures, equipment, and adjacent spaces. Packages shall be available in either neoprene-in shear or spring-flex types in floor or suspended mountings.

Oversized Motors — Field installed oversized motors shall be available for high static pressure applications.

CONTROL OPTIONS

Standard Indoor Thermostats — Two stage heating and cooling operation or one stage heating and cooling thermostats shall be available in either manual or automatic changeover.

Programmable Electronic Night Setback Thermostat — The option shall provide heating setback and cooling setup with 7-day programming capability.

Outdoor Thermostat — This option shall provide staging control of electric heaters based on a set outdoor temperature.



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